

Inside Dope

By GEORGE
F. TAUBENECK



Learn to live and laugh —
thus delay your epitaph

Story of the Week
Gusty Humor
Summer Smiles
Too True To Be Good
Conversation Pieces
Contributed Gems
Real Good Satire
No Wonder Understanding
Is Difficult

Story of the Week

Upon returning from a visit to the U.S.A. an Oriental potentate was asked:

"Wherein do Americans differ most from us?"

After a moment of pondering he observed:

"Their eyes slant peculiarly, and their complexions are pale."

All sorts of delayed tasks have accumulated during Dope's around-the-world tour of foreign subscribers (reports of which culminated in the Aug. 4 World Trade Issue).

Perhaps none of these are so pleasurable as looking over and sorting out jokes and anecdotes contributed to this column.

Herewith a choice selection of these, plus a few picked up during the circumnavigation.

Gusty Humor

There are two kinds of men: one kind likes to be with women who wear sweaters, while the other likes to be with women who knit sweaters. ("Ginger" McCullagh.)

The old-fashioned house used to have the dining room inside and the powder-room outside the house—but it's vice versa in these modern times.

The middle-aged fling generally is onto a davenport.

There was this man who was interested in his wife's happiness. He even hired a private detective to check into possible reasons for it. (Jean Paul Devaux.)

Perhaps the reason that life on other planets is extinct is that their scientists were a little more advanced than ours. (S. H. Tan.)

Summer Smiles

Apparently being away from home for six weeks (at his first summer camp) bothered Jimmy not a whit.

"Weren't any of the boys homesick?" wondered his mother, perhaps plaintively.

(Concluded on Page 10, Col. 1)

Westinghouse To Make Full Line Of Home Furnaces

STAUNTON, Va.—Joseph A. Cerny has been appointed product sales manager-furnaces for the Westinghouse air conditioning division here.

In making the announcement, B. D. Henderson, vice president and division general manager, said that Westinghouse now enters the home heating field as a full-line furnace manufacturer.

Cerny planned the company's new furnace line and is experienced in residential heating, it was noted. He was previously director of engineering and manufacturing for Bryant Industrial Products Corp. of Cleveland.

Describing the new line, Cerny said, "The 70 new Westinghouse furnaces will cover about 95% of the gas furnace market and about 72% of the oil heating market. Thirty-four of the new furnaces have standard motor and drive, and 10 are supplied with direct connected motor-blower drive.

"They will supplement the existing line of Westinghouse heating-cooling furnaces with cooling capacity motor and drive. All units have low-voltage gas control systems, and are approved by the American Gas Association."

Henderson commented, "Westinghouse is in the business of selling atmospheric comfort, and these significant additions to our furnace line now make it possible to sell year-round comfort for any residential application."

Cooling Off Hot Time In the Old Swimming Hole

A man in Arcadia, Calif. was very pleased with his new air conditioned home. It was delightfully cool. But he got the shock of his life when he dived into his new swimming pool. The water was at least 110° F. Seems the engineer had the brilliant idea of using the swim- (Concluded on Page 24, Col. 1)

IRS Plans To Tax All Sizes Of Room Air Conditioners

WASHINGTON, D. C.—The U. S. Internal Revenue Service has announced its intention to the industry to impose the 10% excise tax on all room air conditioners.

At present, under Revenue Ruling 54-462, only those room units under 1 hp. in size are being taxed.

The IRS made its intentions known in a communication addressed to the Air-Conditioning & Refrigeration Institute

and to NEMA. It stated that while plans were being made to issue a revenue ruling to impose the tax on all units, further action would be deferred for a period of 30 days to enable those affected by the ruling to express their views.

General practice usually calls for a 30-day waiting period after official announcement of an IRS ruling, to make it effective. Thus, the effective date of such a ruling might be delayed until November.

Inventories in the hands of distributors and dealers would not be subject to the tax, which is imposed on the manufacturer's sale of the units. However, it is not considered likely that manufacturers of room units will put on any kind of a production push in the intervening period.

Imposition of the tax on units 1 hp. and larger will raise manufacturers' prices of such equipment to distributors between \$10 and \$20, with correspondingly higher retail prices.

It is considered unlikely that the air conditioning industry will put up any great fight to prevent the new ruling from being issued, although both the ARI and NEMA have issued calls for meeting of their Room Air Conditioner Sections to discuss the matter. Committees will probably meet with the IRS to work out matters of interpretation, and to confine the application of the tax to room air conditioners only.

Eventually, the industry may push its fight for a reduction of the tax to 5%, the figure which has been applied to other major (Concluded on Page 21, Col. 1)

Victory Metal Plans Midwest Assembly Plant

PLYMOUTH MEETING, Pa.—The board of directors of Victory Metal Mfg. Corp. here, manufacturer of "Vimco," "Stakold," and "Sno-Queen" lines of commercial refrigerators, has voted to open a midwest assembly plant in the general vicinity of Oklahoma City.

Plans for the new building call for over 40,000 sq. ft. of space, according to A. Raymond, president.

"Increased volume has dictated the need for the new assembly plant which will increase delivery speed, lower operating costs, and promote efficiency," the announcement said.

The "tremendous sales in- (Concluded on Page 21, Col. 4)

BEHIND PAGE ONE . . .

COMMERCIAL Air Conditioning	
Chiller System Replaces Window Units In New Wing of Kalamazoo Hotel.....	5
RESIDENTIAL Air Conditioning	
Nearly 1,000 Air Conditioned Homes Help SAC Retain Highly Trained Personnel.....	7
INDUSTRIAL Air Conditioning	
King Size Plant Offers King Size Problems With Loads Varying from 10 to 600 Tons.....	15
• Rental Plan	
80% of Room Unit Renters Purchase Units, Says Dealer Who Has Tripled Sales.....	9
• Reducing Oil Burner Service	
8 Suggestions Offered by Gulf Spokesman.....	11
• Serviceman—1958	
Service Becomes Big Sales Feature as Industry Strives To De-Emphasize Price.....	13

Holland Denies FTC Charges—Defends Practices

HOLLAND, Mich.—Holland Furnace Co. has indicated that it will appeal to the courts a cease and desist order issued by the Federal Trade Commission. FTC ordered Holland to stop its alleged deceptive sales scheme, scare tactics, and misrepresentation. Holland charged that the evi-

dence against it was insufficient—representing only a few identifiable complaints occurring during a period of seven years in which Holland made over 40 million public contacts and performed more than 3.5 million individual service orders.

It asserted that the com- (Concluded on Page 21, Col. 5)

Report on Education

In This Series:

MANUFACTURERS—What do servicemen think of your factory schools? What would educators like from you?

SERVICEMEN—How much advanced training is available? Where?

BEGINNERS—What kind of school should you attend? Cost? How long to complete training? Apprenticeship programs.

INSTRUCTORS—How do other instructors teach? Handle questions? Test students?

ENGINEERS—What's available at the college level? Why so little?

By Frank J. Versagi, Technical Editor

1. What's the Problem?

At a recent technical society meeting, the shortage of competent servicemen was being discussed. A young guest rose and asked if there were a shortage in that immediate geographic area. Assured in general terms that there was a shortage, he asked, "Then why do I find it impossible to gain employment at any of the major service companies in the area?"

"I have completed training at — — — Trade School and now

need the opportunity to work in the field, but can get no one to take me on."

One contractor pointed out that a trade school course was hardly enough training to warrant a job on the face of it without some experience.

"Experienced men," the young man countered, "are often people with one year's experience 10 times, not 10 years' experience. Without immodesty, I can say that I have talked to

servicemen who actually know less about refrigeration machinery and theory than I do.

"Most veteran servicemen haven't been exposed to schooling or new knowledge in years," he complained.

This actual incident dramatizes an old problem—the problem of initial and continuing education of personnel. Not only at the service level, but at all levels.

The general subject of education is currently receiving much (Continued on Page 14, Col. 1)

Dependable Prescription for Refrigeration & Air Conditioning Equipment

R_x Always Specify READING Copper Tubing

Made by Copper Tube SPECIALISTS

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WORKS: READING, PA.

Frigidaire Recalls 400

Demand Exceeds Supply In Some Models

DAYTON — Recall to work this month of 400 employees by Frigidaire Div. of General Motors Corp. is indicative of improving market conditions, officials of the division believe.

While most of the improved business was credited to new refrigerator and electric range models, Frigidaire also noted some improved activity in its air conditioning products, reported Herman F. Lehman, G-M vice president and the division's general manager.

Lehman said that demand had exceeded supply on Frigidaire's new "Frost-Proof" refrigerator-freezer line, and on its drop-leaf wall oven.

Frigidaire is "sold out" on certain room air conditioner

models, it was stated, and the division was reported to be "moving into high gear in the residential air conditioning business." Installation of its "Trans-Wall" unit, that installs through the side of a house, in some major home building projects, will be announced soon.

June Refrigerator Sales Top 1957

NEW YORK CITY—For the first time this year, industry sales of household electric refrigerators for a single month surpassed sales in the same month of 1957, June statistics issued by the National Electrical Manufacturers Association indicates.

NEMA reported that the industry sold 316,300 domestic refrigerators in June as compared with 305,100 for the like month in 1957. Sales for the first six months were estimated at 1,485,000 units as compared with 1,803,800 in the first half of 1957.

For the third straight month, in June, freezer sales topped 1957 figures. They numbered 121,500 units as compared with 94,800 in June, 1957.

For the first time, freezer sales for the year to date exceeded last year's total. During the first six months, 493,600 freezers were sold as compared with 471,200 in the same period of 1957.

Westinghouse Denies Rumors of Move From Springfield

SPRINGFIELD, Mass.—Fears of local officials that Westinghouse Electric Corp. planned to close its Springfield plant and move operations to Mansfield and Columbus before the first of the year were eased by Mark W. Cresap, president of Westinghouse.

Cresap sent telegrams to the mayor of Springfield and the governor of Massachusetts denying rumors of such a planned move.

The telegram said in part: "The rumor that Westinghouse has completed plans to close the Springfield plant and move half of the operation to Columbus and half to Mansfield before the first of the year is not true. No such decision has been made."

Among products Westinghouse manufactures here are air conditioners, dehumidifiers, water coolers, and beverage coolers.

Cryogenic Conference Opens at MIT Sept. 3

CAMBRIDGE, Mass.—A cryogenic engineering conference will be staged at Massachusetts Institute of Technology here Sept. 3-5, announces K. D. Timmerhaus, secretary of the conference.

Sessions will cover cryogenic properties, equipment, processes, and applications. Registration is \$5 per person.

USED WHEREVER THE BEST IS REQUIRED



**3 More
OF MIAMI'S FINEST
rely on
J-E SOLENOID VALVES**

For quiet, dependable control of air conditioning in every guest suite, Miami's newest luxury hotels—The Carillon, The Deauville and the Dupont Tarleton—all utilize Jackes-Evans Solenoid Valves.

Hill York Sales Corp., air conditioning contractors in co-operation with Graves Refrigeration Co. (J-E wholesaler) selected J-E Solenoid Valves because of their long and proven record of satisfactory service in many other similar installations. They provide positive, automatic temperature control for heating or cooling—quietly control water flow without fluid shock or chatter.

For completely satisfactory performance, specify and use J-E Solenoid Valves. Call your wholesaler or write direct today.



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Controls Division



WHY A .300 HITTER IS BIG STUFF!

Very simple. Because he's better than average. What's your authority? The record books of baseball confirm the fact that the average player does not get three hits in ten times at bat—and that a man who can is, therefore, a bargain.

Do you have any records that tell you whether the compressors and condensing units you buy are the best on the market today? Any records to prove your reject rate is as low as you can get it?

Do you know for certain what is par for compressor performance?

If you haven't compared them with other makes in actual field use, you have no standard. We believe the compressors we're delivering now—because of the new Bendix-Westinghouse methods of quality control—are the best performing units on today's market. But we can't prove we can save you money until you make us prove it with a trial order. How about it?

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EVANSVILLE, INDIANA

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Export Sales: Bendix International, 205 E. 42nd St., New York 17, N. Y.

Electronic Air Conditioning Research

STUDIES in electronic air conditioning are conducted in the white-hot glow of an electric furnace as Dr. J. F. Downie Smith, Carrier Corp. vice president in charge of the Research & Development Div., watches. The furnace has been heated to 1,800° F. and is being used for experiments with thermoelectric materials. It is located in the electrical laboratory of Carrier's new Research Centers, Syracuse, N. Y.



Typhoon Honors Ed Beck for 50 Years' Service

BROOKLYN—Ed Beck, for 50 years an employee of Typhoon Air Conditioning Co., division of Hupp Corp., and its predecessor companies, was recently honored for his years of service by the gift of an engraved watch. Now foreman of Typhoon's paint department, Beck supervised some of the first air conditioning installations in U. S. theaters, it was noted in the announcement and created some windstorms in early movies.

Air Conditioners Push Electricity Use To All-Time High for Week Ending Aug. 9

NEW YORK CITY—Hard working air conditioners in ever increasing numbers pushed electricity production to a new high for the week ending Aug. 9, the Edison Electric Institute reported recently.

Utilities around the country put out 12,707 million kwh. during the week, a gain of 5.3% over the same week last year and 88 million kwh. more than in the previous week—which had set a new record to that time.

Pacific Northwest was the only area that produced less electricity than last year.

Meanwhile, the Dallas Power & Light Co. reports that it reached a peak of 737,500 kw. at 3 p.m. on July 30 when tem-

peratures hit 102° F. Air conditioning was credited with a great percentage of the demand.

P. M. Rutherford, Jr., vice president of the company, said 216,794 room air conditioners have been installed in Dallas since 1954, 21,967 of them during the first six months of this year.

An additional 5,507 central systems have been installed for commercial and industrial use since 1954, he added.

The Union Electric Co. in St. Louis reported that June air conditioner shipments by certain distributors to dealers in its territory were 61% higher than a year ago. These distributors shipped 4,302 units in June and 14,759 during the first

six months. The half-year shipments were up 15% over last year.

Air conditioner and dehumidifier shipments for the first half of 1958, incidentally, were the only major appliances to show gains over last year.

July Home Starts Highest Since May of 1956

WASHINGTON, D. C.—Builders started construction on 107,300 private homes during July, the highest monthly total since May, 1956, the U. S. Dept. of Labor has reported.

This compares with 104,500 in June and 93,900 in July last year.

Liberalized Federal Housing Administration and Veterans Administration loans earlier this year was credited with sparking the jump.

NLRB Actions

Boycott, Coercion, Discrimination Are Topics of Decisions

WASHINGTON, D. C.—In recent actions:

A National Labor Relations Board trial examiner has recommended that the Willamette Association of Plumbing and Heating Contractors, Inc. and four individual Salem, Ore. contractors stop discriminating against employees to discourage membership in a labor organization and interfering in their rights to engage in or refrain from concerted activities.

The NLRB ordered the Teamsters Union to end a secondary boycott against the Light Co. of South Bend, Ind., an appliance dealer.

NLRB tagged as unlawful coercion refusal by the Southern California Pipe Trades Council to participate in a joint grievance board with employers because union members objected to one employer member of the board. NLRB pointed out that employers were entitled to select their own representatives without interference from the union.

ARI Revises Standard 410 on Testing, Rating

WASHINGTON, D. C.—Air-Conditioning & Refrigeration Institute has announced publication of a revision of ARI Standard 410, "Forced Circulation Air-Cooling Units," and deletion of ARI Standard 411, which heretofore has specified methods for testing and rating such units.

Revision of ARI Standard 410 (now numbered ARI Standard 410-58) consists of elimination of the reference made in its earlier versions to Standard 411 for testing and rating provisions, and substitution of a reference to ASRE Standard 33-58, a joint ASRE-ASHAE Standard, for methods of testing. ARI Standard 411 has been discontinued, since the new ARI Standard 410 covers the methods of testing and rating formerly prescribed by standard 411.

SO HALSTEAD & MITCHELL ENGINEERS SAID . . .

WIDE FIN SPACING CUTS CLOGGING ON H&M AIR-COOLED CONDENSERS

Maintenance costs are low when you use Halstead & Mitchell Air-Cooled Condensers

All H&M condensers feature wide spaced fins that won't clog as rapidly with dust or other air borne particles. The exclusive Turbu-Flo fin design adds surface area and improves heat transfer by up to 15%.

Large fans driven at low speeds assure quiet operation of even the biggest units. Multiple circuiting to meet the requirements of the individual job is furnished at no additional cost when specified. Casings are extra-rugged; won't rattle or loosen with use.

Type AC condensers are propeller fan models, normally installed on a roof, remote from the compressor. Single units are available in 5 to 50 ton nominal capacity. 60 to 100 ton capacity is provided through use of two smaller condensers supplied with necessary manifolding for easy field installation. Floor mounting is standard; ceiling mounting can be provided.

Type BC condensers are centrifugal models for indoor installations and where ductwork is required. Available in a wide range of sizes, Type BC units can be arranged to exhaust equipment room heat in summer, and to utilize condenser heat in winter.

Type ACR condensers are centrifugal fan units available in 2 through 7½ tons for residential air conditioning. Space is provided for compressor and controls.

Get complete information from your local distributor, or write Halstead & Mitchell, Bessemer Building, Pittsburgh 22, Pa.



Chiller System Replaces Window Units In New Wing of Kalamazoo Hotel

By C. Dale Mericle

KALAMAZOO, Mich.—Thirty-six guest rooms in the popular Harris hotel here have been air conditioned with a chilled water system that replaces window units in many instances.

This installation for the second and third floors of the newer wing of the hotel was designed by Tony Slevats, sales engineer for Schippers Service Appliance Co. here.

Major components employed on the job include a 20-ton Typhoon water chiller, a Marley cooling tower, and 36 Acme ceiling-suspended fan-coil units.

The chiller and tower are located on the roof. The chiller design features a totally enclosed cabinet permitting such an outdoor installation.

These two pieces of equipment are mounted side by side on I-beams resting on bearing walls placed at a 45° angle across a corner of the structure.

Incidentally, in this connection a considerable saving in cost of installation resulted from careful planning, measurement, and preparation, according to Slevats.

It required only two hours for an 80-ft. crane to hoist the I-beams, chiller, and tower into place on the roof, even allowing for the careful "threading" of the boom through the numerous power lines that were in the way, Slevats says.

After the beams were in position and the chiller and tower set on them, the beams were cemented in place.

Chilled water supply and return lines drop from the chiller down through a pipe chase and then extend along the corridors of the second and third floors to the fan-coil units.

There are two sets of lines on each floor—on each side of the corridor at the ceiling. It was the original plan, Slevats says, to run just one set of lines down the corridors with branches extending across the corridor at the ceiling to serve the units on the other side. This would have required that the entire corridor ceiling be furred down to conceal the lines.

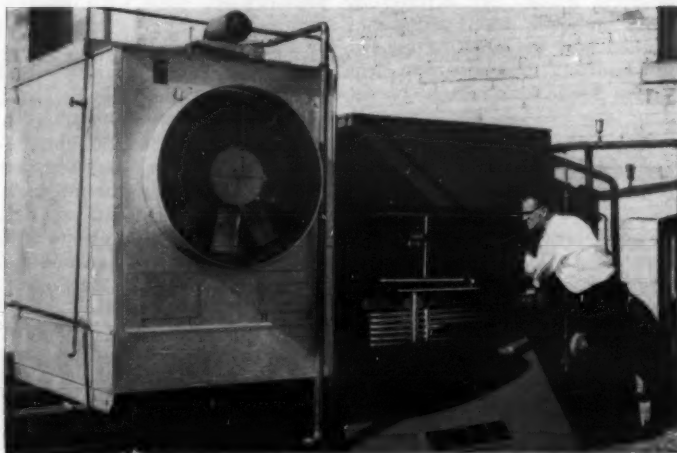
By using two sets of lines, one on each side, the hotel may conceal these by lighting covers if such an approach is desired, or, furr down the entire corridor as first planned.

The fan-coil units are located just inside the door of each guest room. A line voltage thermostat is provided for each unit to control fan operation.

Guests may adjust the thermostat setting to control the amount of cooling, the chilled water unit being set to deliver water at about 47° F.

Chiller and water circulating pump operate to maintain this temperature water as long as the outdoor temperature is above 70° F. When the ambient drops to 70°, an outdoor thermostat cuts out the chiller.

Two 10-hp. condensing units are incorporated in the Typhoon packaged chiller. These are hooked up to operate in sequence: first one unit cuts in



and then if more cooling is required, the second unit starts. Cooling tower is tied in so that it starts operating as soon as the first condensing unit of the chiller is cut in.

Main control switch is located in the housekeeper's office in the hotel. Here also are two pilot lights. One shows whether the chiller is operating or not; the other shows operation of the chilled water circulating pump.

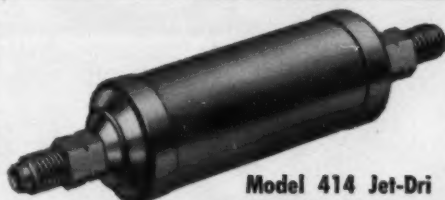
Condensate drain lines from the fan-coil units run to slop sinks in closets along the corridor. Plugs are located at frequent intervals along the condensate lines to facilitate cleaning when necessary.



LEFT: Packaged chiller and cooling tower serving air conditioning system for 36 rooms in Harris hotel, Kalamazoo, Mich., are installed on roof. Here Tony Slevats, engineer, checks control settings on chiller.

TYPICAL of guest room installations is this Acme unit in Harris hotel. Line voltage thermostat controls blower operation.

Don't let this trouble... come between you and your profits



Model 414 Jet-Dri
economy drier features
PA 400 silica gel

Outstanding desiccant used in Jet-Dri adsorbs up to 98% more moisture than older type silica gels. PA-400 also removes and prevents formation of harmful acids that corrode iron, copper, brass and aluminum. No chemical reaction in refrigeration system. Constructed with brass fittings (1/4" S.A.E. male flare connections). Flow in either direction.

Head off dirt, moisture and acids with A-P drier-filter-strainers... You'll be money ahead in reduced service costs

We're not just making a mountain out of a molehill—this heavy deposit of dirt, scale and solder particles was found in a Trap-Dri filter-strainer after only 45 days' use. Such impurities along with moisture and harmful acids are a major cause of imperfect valve operation... a situation that results in costly callbacks, downtime and valve repairs.

You can protect expansion valves and your service profits by installing the proper drier or filter from A-P's complete line of Jet-Dris, Trap-Dris and Trap-Its. Hook one up ahead of old or new valves... it's your assurance of smooth valve operation and freedom from freeze-ups and corrosive acid formation.



Model 408 Trap-It
—has hundreds of
diamond-shaped
filtering tunnels

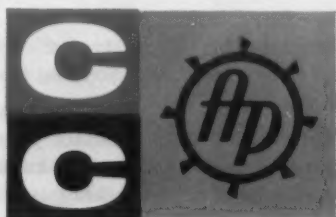
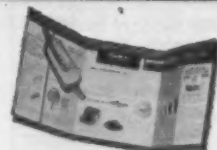
Every drop is filtered again and again. Has many times the filtering and absorbing area of an ordinary filter. May be used with any make expansion or solenoid valve. Three sizes: 1/4 or 3/8" fittings on the regular and large sizes and 3/8, 1/2 or 5/8" fittings on the extra large. S.A.E. male flare inlets and outlets.



Model 410 Trap-Dri
assures 100%
acid removal plus
complete moisture
adsorption

Exclusive honeycomb depth filter combined with PA 400 silica gel—filters out dirt as small as 5 microns. Water and acids adsorbed physically, with no release of any harmful substance to refrigerant circuits... no appreciable pressure drop. Units hermetically sealed with plastic caps. Refillable drier available in large sizes. Flare and solder types—1/3 to 12-ton capacities. Write for data on "Twin" Trap-Dri for large capacity jobs.

WRITE TODAY for latest application data on new, improved Jet-Dri, Trap-Dri and Trap-It plus specs.



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Controls That Make Modern Living Possible

Stafford Heads Sales Promotion, Advertising At Detroit Controls

DETROIT—Appointment of Willis Stafford to sales promotion and advertising manager of Detroit Controls Div. of American Standard has been announced by F. G. Coggin, general manager, sales and marketing.

Stafford is well known in the refrigeration industry. Prior to joining Detroit Controls, he was with Herman Goldberg Co. in Chicago, handling all sales promotion and advertising. Since joining Detroit Controls, he has handled the sales promotion for refrigeration products.

For many years, Stafford has been an active member of the American Society of Refrigerating Engineers and Refrigeration Service Engineers Society.

Byers Boosts Prices On Wrought Iron Items

PITTSBURGH—A. M. Byers Co. has announced that prices on its 4-D wrought iron products have been increased 3%. The increases are similar to those made recently in the steel industry.

A. S. Chalfant, vice president-sales, stated, "Despite the higher manufacturing costs required for the production of wrought iron, we are holding our price increase down to the levels established by the basic steel industry and will absorb part of the additional manufacturing costs created by the USW wage increases granted on July 1."

Prices of Byers "Amballoy" electric furnace steel products were also increased in keeping with increases made by the steel industry, it was announced.

Distributor Sales Up 7% In June

WASHINGTON, D. C.—June sales by air conditioning and commercial refrigeration equipment distributors increased 7% over the same month last year while their inventories shrunk by 9%, the U. S. Bureau of the Census reported recently.

Their June sales jumped 7% over the preceding month, though sales for the first six months only equaled those of the same period in 1957. Inventories declined 1% from May.

Wholesalers of plumbing and heating equipment and supplies saw their sales drop 3% below June, 1957, though they were up 9% over May. Sales for the first six months were down 9% from last year.

Inventories were 4% below June, 1957, though they crept up 1% over May.

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

Only 25¢ each.

70% of Space Sold For NFFDA Convention

NEW YORK CITY—Nearly 70% of available space at the forthcoming merchandising convention of the National Frozen Food Distributors Association has been taken, according to William M. Walsh, chairman of the association's convention committee.

Convention will be staged in the Statler hotel here Oct. 26 through 29. Only 61 out of 200 available booths remain to be allocated.

Several manufacturers of refrigeration equipment are among the exhibitors.

More on 50-Cycle Equipment 2 Firms Furnish More Details Than Appeared Aug. 4

DETROIT—"Full efficiency 50-cycle units" are offered by Dunham-Bush, Inc., which has spelled out in more detail the information published in the World Trade Issue of the NEWS, Aug. 4.

The company's Brunner-Metic motor-compressors are supplied, in true 50 cycle, in sizes of $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$, 1, 1½, 2, 3, and 5 hp. In water-cooled condensing units, Dunham-Bush supplies genuine 50-cycle equipment from $\frac{1}{4}$ through 7½ hp.

Open-type belt-driven compressors are made with 50-cycle motors, and pumps are driven at speeds to produce displacement and c.f.m. equal to and above comparable 60-cycle units, according to the company.

A list comparing 50 and 60-cycle compressor displacement is available from Dunham-Bush.

Copeland Refrigeration Corp. manufactures "compressors with full capacities and genuine 50-cycle motors in both Copeland and Copelaweld—in all

sizes through 1 hp. and in many models and sizes of the 1½ hp," the company reports in a communication which arrived too late for publication in the Aug. 4 "World Trade" issue.

According to the company, its line is "so extensive that it would be impractical to submit a list for publication." Copeland prefers to have prospective customers contact the company for specific recommendations on 50-cycle equipment.

Charter Bowling Green Firm

BOWLING GREEN, Ky.—Modern Refrigeration Co. here has been granted a state charter to sell and rent refrigeration and restaurant equipment.



How you get more than just a motor

You get true design flexibility with

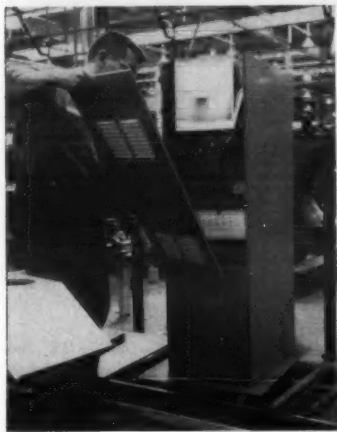
Suppose you have a particularly tough design problem—one that requires a specific motor to give the best results. You don't want to take a chance on not getting the right motor for the job.

This is where Century Electric's complete line of a-c and d-c motors, 1/20 to 400 hp, can be of help to you. You have a complete variety of motors

from which to choose. Makes it lots simpler than shopping around to find what you need.

For help on your particular design problem, contact your Century Electric sales engineer. He has the know-how that comes from applying, engineering and thinking motors and nothing but motors day in and day out. If he can't give you on-the-spot

First Trane Residential Climate Changer



FIRST Trane residential Climate Changer heating unit rolled off the production line on the prototype run in La Crosse, Wis. Trane Co., an established manufacturer of big building air conditioning, entered the residential heating and cooling field this summer. It has just completed a \$1.5 million plant at Clarksville, Tenn., where the new line will be manufactured.

Nearly 1,000 Air Conditioned Homes at Dyess Air Force Base Will Help SAC Retain Highly Trained Technical Personnel

ABILENE, Texas—One of the largest air conditioned communities in the United States is located at Dyess Air Force Base here, where nearly 1,000 homes are equipped with Westinghouse air-cooled residential air conditioners.

A Strategic Air Command installation, Dyess represents a new concept in providing permanent, modern housing for Air Force personnel.

The Air Force believes it has a compelling reason for providing such facilities for its airmen.

Equipped to deliver nuclear weapons, and trained for bombing missions on a global scale, SAC has often been referred to as "the chief deterrent to World War III."

Despite its crucial role in the nation's defense plan, SAC is faced with the continuing problem of retaining its highly trained technical personnel, many of whom elect to take up careers in civilian life. The loss of such skilled personnel is costly to Uncle Sam. For a B-47 pilot with five years' experience,

the government has invested more than \$500,000 in his education and training. A flight engineer with five years' service represents an investment of \$37,000 to the government.

In order to minimize its personnel turnover, and thus maintain an experienced, capable striking force most economically, SAC is offering career airmen many material advantages comparable to those in civilian occupations.

Modern, well-planned homes in attractive communities are one such inducement that promise airmen and their families more stability and convenience.

Arkla Names Eskew To Direct Engineering, Research, Development

SHREVEPORT, La.—Robert K. Eskew, one of the nation's pioneers in the development of absorption systems for year-round air conditioning, has been named director of engineering, research, and development for Arkla Air Conditioning Corp., it was announced by W. R. Stephens, president.

At the same time, Stephens announced that general sales offices for Arkla have been located permanently in Little Rock, Ark., at 812 Main St., under the direction of W. G. Wepfer, general sales manager.

Arkla's plant at Evansville, Ind., now engaged in the manufacture of gas air conditioning equipment and the new product, "Gaslites," remains under the direction of L. E. Walbridge, vice president of production.

Production at the Evansville plant has been stepped up to three shifts per day, six days per week, in order to meet increasing demand for the "Sun Valley All-Year" gas air conditioning units, Stephens said. Production is now at the rate of 10,000 units per year.

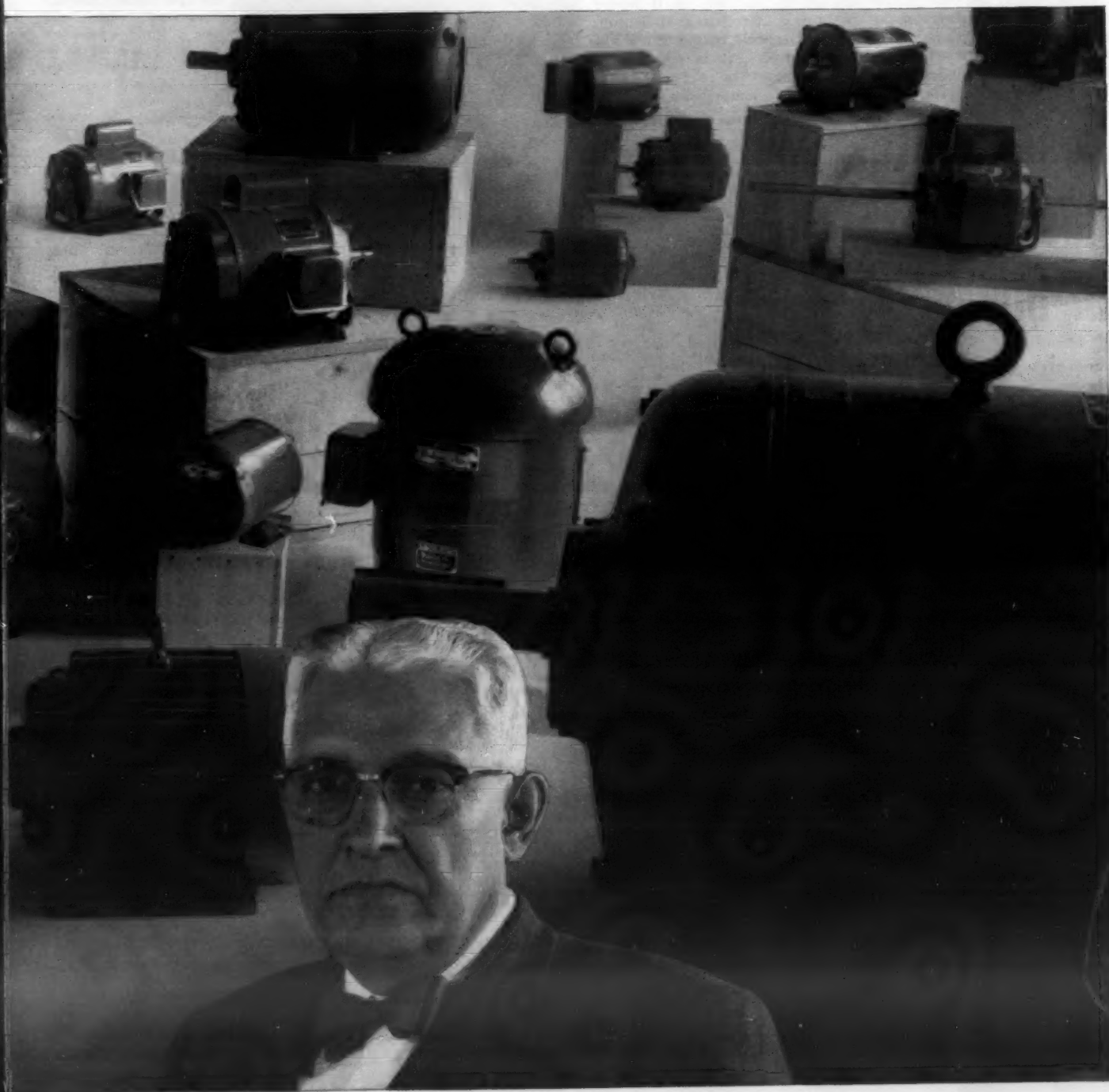
Cooling Can Be Added To 2 NAHB Research Homes

WASHINGTON, D. C.—Though air conditioning is not provided in the two research houses recently started by the National Association of Home Builders, provision for it is included.

The homes, one in South Bend, Ind., and the other in Knoxville, Tenn., will demonstrate what can be done to create attractive, low-cost homes through the use of new building materials and equipment, or bold adaptations of known materials.

The South Bend house will use a new lightweight foamed concrete which will make the floors warmer in winter. Coupled with this will be a new heat-duct distribution system under the floor so designed that air conditioning can be added.

The Knoxville house will incorporate a new electrical resistance hot air heating system, designed so that air conditioning can be added.



Century Electric's complete line of motors

answers, he has an experienced engineering staff backing him that can come up with quick, dependable answers to your problem.

This is why you get more than a motor when you take your motor and generator design problems to Century Electric. You get a quality product backed by know-how. You can call on men who

want to help you get the right motor for your job. For more information, contact your local Century Electric Sales Office or Authorized Distributor.

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Tranter Uses Ranchero as Showroom on Wheels For Demonstrating Truck Refrigeration Units

LANSING, Mich.—A specially designed Ford "Ranchero" mobile truck refrigeration demonstrator is being employed by the Kold-Hold Div. of Tranter Mfg., Inc. to initiate what the company calls "a new concept in the art of sales demonstration for truck refrigeration equipment."

The blue and white Ranchero is actually a showroom on wheels as its load-box is equipped with Tranter-made equipment which is ready to demonstrate on a moment's notice.

Equipment included for demonstration gives the viewer a comparison of over-the-road truck refrigeration systems powered hydraulically or me-

chanically with a blower low side.

Mechanical systems demonstrated include the "Mark" unit for general applications and the "Lance" unit for retail milk delivery applications. These units receive power through a flexible shaft directly from the truck engine.

The Mark unit front end mount can be demonstrated from inside the engine compartment when the car engine is running. The hood is raised so the viewers may see the operation which is energized and de-energized during the demonstration with a manual switch.

For demonstration purposes a similar drive unit for the Mark

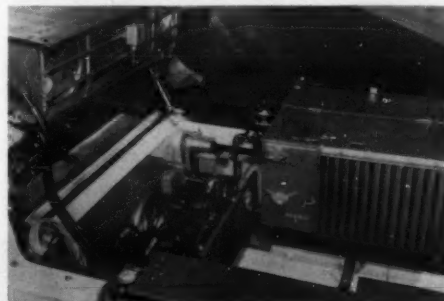
has been installed in the load box and may be operated through a switch. This unit offers the viewers a better vantage point to note the flexible shaft action of the drive.

The Mark condenser is then dropped down presenting the inside of the unit during this operation. Now the actual operation of the system as it would apply in a "live" truck installation has been staged.

The Lance unit can be coupled with an electric circuit and operated on standby, as it would be during an actual installation. When the coil temperature approaches 32°, it is possible to demonstrate the defrost operation. The compressor is cycled



TRANTER'S RANCHERO DEMONSTRATOR is ready for viewers. The Super 50 Blower has been placed on the cab, the Mark unit is seen mounted on the far side of the load-box, and the Lance unit may be seen in the foreground. Steps are dropped from the tailgate to allow viewers a closer vantage point.



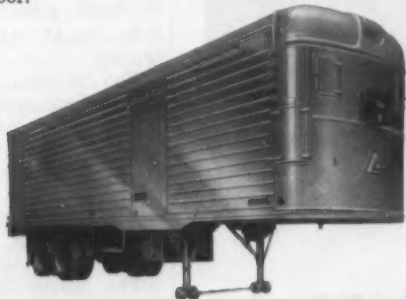
CLOSE-UP INDICATES the working parts of the Lance unit. The Super 50 Blower is pictured at the left with the Mark unit condenser at the right. Tranter's Ranchero demonstrator made more than a dozen appearances during the first leg of its itinerary.

Dorsey uses Rubatex—the best insulation money can buy

RUBATEX cargo-protecting flooring insulation will prove that under the most extreme conditions your refrigerated trailer will hold constant desired temperature—will hold cost and weight down—will increase inside space and payload capacity. Proof enough that RUBATEX INSULATION HARDBOARD is the best flooring insulation money can buy?



Rubatex Insulation Hardboard is easy to install—less labor cost in elimination of furring strips because Rubatex has enough structural strength to support extruded aluminum floor.



"RUBATEX IS STANDARD FLOOR INSULATION on our new REEFERATOR . . . gives us MAXIMUM INSULATION in bottom plus MORE CUBIC CARGO SPACE . . . its load-supporting, zero moisture pick-up properties ELIMINATE CONSIDERABLE WEIGHT IN FLOOR AND SUB-FLOOR CONSTRUCTION."

Dorsey Trailers, Inc.

You get peak performance with Rubatex—here's why:

- Lowest heat conductivity of any known structural material (K factor 0.21)
- Compressive strength (60 p. s. i.) strong enough to support floor alone
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INSULATION HARDBOARD

GREAT AMERICAN INDUSTRIES, INC.
RUBATEX DIVISION, Dept. AC-2

Bedford, Virginia



For full details and sample of Rubatex Insulation Hardboard—print your name in space below, attach to your company letterhead and mail to us.

Name _____

Send for Free Samples and Data Sheets

Dole Conference Introduces Truck Refrigeration Units

CHICAGO—Dole Refrigerating Co. recently held a sales conference to introduce its "Lektro-Cel" generator kits and over-the-road truck refrigeration systems to its field, factory, and office personnel.

The generator kits are for converting standard electric plug-in refrigeration systems to over-the-road operation.

"This is accomplished by means of a generator on a truck engine which supplies single or 3-phase power to a standard, hermetic, semi-hermetic, or open type condensing units," it was explained.

"The Lektro-Cel over-the-road truck refrigeration system, is a complete system utilizing the generator kit and a standard semi-hermetic condensing unit.

"The complete systems are available with blower coil evaporators, 'Cold-Cel' truck plates, or 'Truk-Cel' eutectic blower units. Low temperature blower coil systems are equipped with 'Heat-Cel,' completely automatic, hot gas defrost systems."

80% of Renters Buy

Rental Plan Triples Room Air Conditioner Sales and Assures Profitable Transactions

SOUTH GATE, Calif. — A huge, billboard-type sign at the Fred W. Held & Son store here informs an average of 20,000 passersby daily that they can rent a room air conditioner for 75 cents a day.

At the same time, however, the sign indicates that Held & Son will sell an air conditioner at 50 cents a day. The comparison, plus the rental offer, has been enough to triple room-cooler sales a single year.

Fred W. Held, veteran appliance dealer, hit on this idea when he found that a demonstration in the home will sell a cooler where nothing else will. Making inquiries, quite a number of homeowners would be willing to rent a room cooler for a trial period in the home, and if pleased, they are likely to buy.

Consequently, Held embarked on an aggressive rental program which has worked out so well that 80% of the units are sold at full list price.

Renter Immediately Has Large Investment

"It's a simple program," Held indicated. "We simply set up the rental program in such a way that the renter immediately builds up a healthy investment in the room cooler, and, because this amount has already been committed, he is usually willing to go ahead and buy."

"For typical units we charge 75 cents per day, with a two-month minimum and a service charge of \$25 for the installation, which usually means some extra wiring, perhaps a few changes in the window, some shielding, and even some scaffolding to put the machine in place."

"By the time the two months have gone by, the customer has already invested \$70, a good third of the purchase price of the room cooler. Once he has proven to himself that it will do the job, it isn't difficult to convert a rental into a sale."

Soon after he got under way, with a stock of 30 units set up for rental operations, Held found that $\frac{3}{4}$ and 1-hp. units wouldn't do the job in South Gate's torrid summer heat.

Now Stocking Larger Conditioners

Consequently, he began stocking larger units, of 2-ton capacity, for which the customer pays \$1.10 per day. With the \$25 installation charge, this raises the customer's initial investment to \$91.50. Again, it is the "stepping stone" which converts a rental into a sale.

Every customer who comes in to rent a unit is given a thorough explanation of a rental plan. He is told frankly that the store is more interested in selling the unit than renting it.

The fact is pointed out that time payment plans can be set up whereby the homeowner need pay only 50 cents a day for the machine instead of the 75 cents which it costs to rent it. This plants the seed of

ownership interest and the rental plan germinates it.

At the end of 60 days, instead of sending a truck and two mechanics around to remove the machine, Held sends a skillful salesman. The salesman operates on the premise that the family has already gotten a lot of enjoyment and living comfort from the room cooler.

Seeks To Convert Rental to Time Payment Contract

He bears down on the prospect to convert his rental contract into a time payment contract. Even if the hot summer season is over, he tells them, they will have it ready for op-

eration as soon as the temperature starts climbing the following year.

Eighty per cent of the prospects capitulate. Most important, they buy at the full list price with no trade-ins involved, no "competitive prices" to worry about, etc. The result is an extremely clean business, with the highest possible returns from every unit, according to Held.

Held takes the 20% that do come back through a complete shop check. He repairs them if necessary, and stores them for rental for the following year.

He feels that every unit must be rented several times before

the rental program will show a profit. Because manufacturers change models each year, there are variations in customer preferences from year to year, which makes a room cooler stored through the winter something of a liability.

If, however, the unit sells during the next installation, the rental program has been profitable indeed.

At one time, the Held concern had no less than 35 coolers out on rental, picked up only three, rented those three out, and sold two of them during the second month during which they were used.

A lot of would-be renters balk of course at the high cost of installation, which, pegged at \$25, is deliberately high enough to insure that there is real interest on the part of the customer.

Any customer who will get up the \$25 for the installation is sincerely interested in improving his home comfort.

Room Unit Breath Test Recommended

NEW YORK CITY—Can you see your breath when puffing it in front of a window air conditioner?

That, according to an advertisement by Hampton Sales, Fedders dealer here, is "the most dramatic proof of air conditioning superiority you can perform yourself."

The advertisement emphasized that "Fedders air conditioners give air so cold when needed it frosts up breath instantly."

SEND FOR REPRINTS

Product Knowledge, Protective Maintenance, Trouble-Shooting, Adjustment, Repair of Electric Motors.

Only 40¢ each.

For your copy, clip this ad and mail with name and address to: Air Conditioning & Refrigeration News, 450 W. Fort, Detroit 26, Mich.



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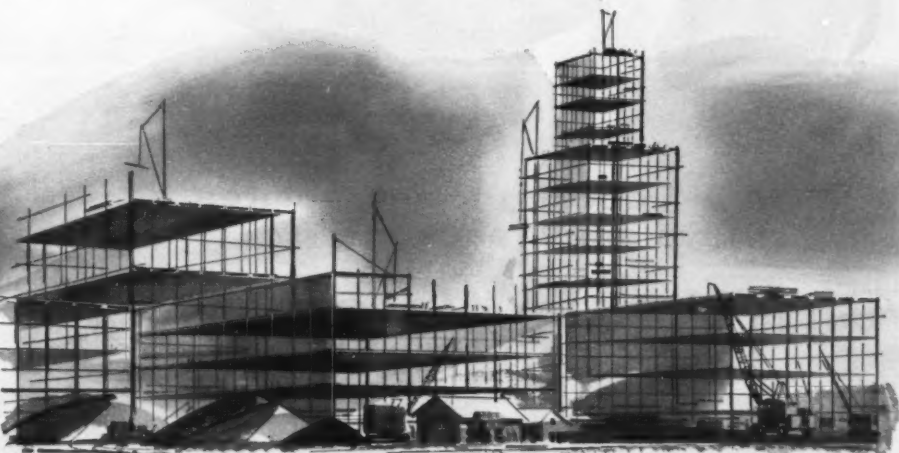
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WOLVERINE'S BEST FOR THE BIG JOBS



Wolverine copper tube—in straight lengths and Wolverine Roll-O-Tube®—is used for big refrigeration and air conditioning jobs because it is manufactured, packaged and marketed to meet the complete tubular needs of the man who has to work with it... (ease of identification, handling, cleanliness, protection, workability, etc.)

Wolverine tubing for refrigeration purposes is controlled throughout every manufacturing operation to assure the wholesalers' customer with the very best tube for his job.

Next time you restock seamless copper refrigeration tube—for big jobs or for small ones—specify tubing made the Tubemanship way... WOLVERINE TUBE.

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Inside Dope

By GEORGE
F. TAUBENECK

(Concluded from Page 1, Col. 1)

"Oh, some. Those who had dogs back home."

"Yeah, she's waiting around for the right man to come along."

"But in the meantime she's having a marvelous time with plenty of wrong ones."

At the Pearly Gates appeared a doctor. St. Peter thumbed through his books, and couldn't find this medico's name on the Admission List of the Day.

Forlornly the doctor took an escalator down to Hell. Same situation. Satan had no room for him, either; and sent him back "upstairs."

"Ah, yes," nodded St. Peter. "We have found a discrepancy in our records during your short

absence. You weren't due to arrive here for another 10 years. Say, who was YOUR doctor?"

"What do you mean," a doctor challenged his 70-year-old patient, "by trying to tell me your virility is too high?"

"It IS too high," the septuagenarian reiterated. "It's all up in my head."

It was time to go to church. Mother's arms were full of coats and hats, but she just stood there while her five small children milled around.

"Come on, come on, get a move on," impatient Father.

"No," she stood her ground. "This time you wrestle them into their coats while I go outside and honk the horn."

Daily for weeks an old gentleman entered a downtown church in the early afternoons and napped.

To a rector who awakened him, he apologized:

"Like an old dog, I enjoy sleeping at my Master's feet."

Too True To Be Good

There have been times when we've been tempted to do what theatrical magnate Spyros Skouras did at a musician's union banquet.

He was billed as principal speaker; but before he was introduced there were umpteen committee reports, remarks from dignitaries, etc., etc. At last it was his turn.

"It's so late," he said, "I'll mail you my speech."

Whereupon he sat down.

To his harem, after touring the U.S.A., returned an Arab Chieftain. His many wives and concubines, all agog, plied him with questions about his trip.

"No," he shrugged them off,

"it wasn't the skyscrapers, the automobiles, the cowboys, or the gangsters that impressed me most about America. It was their salesmen."

Whereupon he unpacked, in the middle of a bone-dry desert which stretched farther than human eyes could see—an outboard motor and a powered lawnmower.

Conversation Pieces

Write down your house number.

Double it. Add five.

Multiply by fifty.

Add your age (don't cheat).

Add 365. Subtract 615.

In the resultant sum you will find your house number at the left and your age to the right. Don't believe us, eh? O.K. try it.

Perserverance is the most overrated of traits if it is unaccompanied by talent; beating your head against a wall is more likely to produce a concussion in the head than a hole in the wall.—SYDNEY J. HARRIS.

Here's how one giftless but gifted husband got out of a domestic jam:

"How do you expect me to remember your birthday, dear, when you never look any older?"

Perhaps money is called "Jack" because a Queen usually takes it.

"As a man's brainpower increases," observes Bob Considine, "his legs get weaker."

Come to think of it, that isn't funny.

Contributed Gems

To an enquirer with a personal problem, an editor of *Christian Life* advised:

"Read the Gospel according to St. John. Pray God to make it plain to you. Then, if you have further questions, write us for the answers."

"Fried grasshoppers," reported the speaker, "were a favorite food of King Solomon's thousand happy wives."

From the front row croaked a sepulchral voice:

"I'd be more interested to learn what Solomon ate."

Real Good Satire

Some of the best original humor being turned out today appears on the front page of *Arizona Progress*, published by the Valley National Bank of Phoenix, and sent us through the courtesy of State Senator Art Schellenberg.

Inside of this publication consists of charts, graphs, and statistical data.

But that front page is a dilly.

Recent sample is a purported conversation between a teen-age boy and girl who've been saturated with television commercials, to wit:

Boy: "Hello, Glamor Puss. You look as lush as an adman's adjective."

Girl: "I'll bet you tell that to all the curls."

Boy: "You smell good, too. What is your secret?"

Girl: "I have no secrets. Not in this dress."

Boy: "What I mean is, you are so kissable, caressable, edible, and incredible, how do you do it?"

Girl: "It isn't easy. I use dandruff remover, hair remover, blemish remover, wrinkle remover, bad breath remover, perspiration remover, flabby flesh remover, dead skin remover. . . ."

Boy: "Gee, that sounds pretty drastic. Doesn't leave much of the original equipment, does it?"

Girl: "No, but when I get pared down too fine, I take vitamins, minerals, tonics, extracts, peptoplasm, riboflavin, yeast, wheat germ, and if there is any room left, some food."

Boy: "What about beer?"

Girl: "I don't like the sound effects."

Boy: "How do you stand on cigarettes?"

Girl: "I tried them once but got all worn out pulling the smoke through those tiny filter traps."

Boy: "Are you in condition for a date? But you must act now. This offer will not be repeated."

Girl: "Be with you in a jiffy. Thanks to modern time-saving devices, I can cook dinner, mow the lawn, and take a shower all at the same time."

Boy: "Don't forget the aspirin, bufferin, and chlorophyll."

Girl: "I won't. Mother told me everything."

Boy: "Congratulations! Now can I take just a minute for a message of vital importance?"

Girl: "Not on this program. You have only 30 seconds to sell what you have to sell."

Boy: "Very well then. I'll come right to the point. I love you—so I must kill you."

Girl: "But why? I don't see the logic in that."

Boy: "It's quite simple. If I don't kill you, you will grow old—and I won't love you."

Girl: "Oh, of course. But don't be messy. I want to look my best when the crowd gathers."

No Wonder Understanding Is Difficult

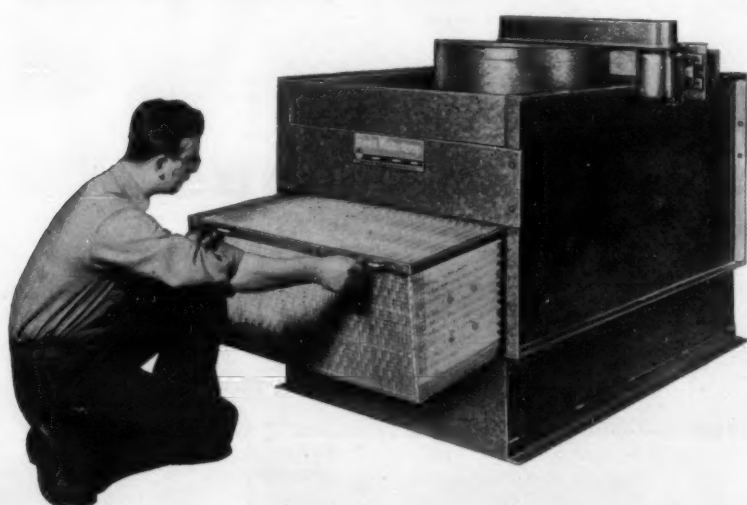
George Orwell converts a passage of real good English (from the Biblical *Ecclesiastes*) into "modern" English of the worst sort.

"I returned, and saw under the sun, that the race is not to the swift, nor the battle to the strong, neither yet bread to the wise, nor yet riches to men of understanding, nor yet favour to men of skill; but time and chance happeneth to them all." (*Ecclesiastes*, King James version.)

Here it is, as Orwell translates it into bureaucratic, or office-memo, English:

"Objective consideration of contemporary phenomena compels the conclusion that success or failure in competitive activities exhibits no tendency to be commensurate with innate capacity, but that a considerable element of the unpredictable must invariably be taken into account."

Or, never underestimate the power of Luck.



Puts big cooling tower features
in small package

Binks' new Watertemp

Small, compact, economical in cost, operation and maintenance—Binks Watertemp cooling towers are ideal for air conditioning installations in the 5 to 60 ton range. Base dimensions for the largest unit are only 7'6" x 12' and maximum over-all effective height is 5'.

Efficient counter-current water and air flow. A dynamic and static balanced fan mounted at the top of the tower draws air up through the decking. Water is brought in at the tower top under low head and flows down over the multi-finned plastic decking. No nozzles are required to effect initial water break-up.

Heavily galvanized after assembly. Metal framework, panels and all attachments are heavily galvanized after assembly. Special hot-dipped galvanizing deposits a 20% heavier

thickness than established as standard by Federal and A.S.T.M. specifications. No additional painting or coating is required.

Easy to install and maintain. Only a simple mounting foundation is needed to support the tower package. Heavy galvanizing cuts metal maintenance to almost zero. The plastic internal decking unit slides out for cleaning and makes routine inspection and maintenance of the tower an easy job.

Send for complete data. Ask your Binks Branch Office, or write direct for the new Watertemp Bulletin. For larger induced and forced draft cooling towers, ask for Bulletin 477-A (Binks 3-B series) and Bulletin 333 (Binks 2-K series). Binks engineers will be glad to answer your questions and help solve your particular cooling problems. There is no obligation.

7036

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DRAFT COOLING TOWERS AND INDUSTRIAL SPRAY NOZZLES

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DIRECTORY

8 Suggestions To Reduce Oil Burner Service Cited at OHI Convention

NEW YORK CITY — Eight recommendations that "should reduce servicing [of domestic oil burners] by improving combustion and reducing rate of nozzle clogging" were presented before the 36th annual Oil-Heat Institute convention here by B. R. Walsh of Gulf Research & Development Co.

He suggests:

1. Addition of a nozzle shield to reduce nozzle temperatures.
2. Use of an efficient combustion head.
3. Use of nozzles having rates of flow least sensitive to fuel oil viscosity.
4. Operation of nozzles at pressures not exceeding 100 p.s.i. for required flow rate.
5. Use of metals of low catalytic activity in nozzle and strainer parts. ("Some metals such as copper and possibly brass act as catalysts when in contact with hydrocarbon oils and may substantially increase the rate at which fuel deteriorates.")
6. Installation of new nozzles rather than reconditioned nozzles in servicing.
7. Use of delayed opening and dribble-proof devices.
8. Use of combustion-analyzing instruments in installing and servicing burners.

RECOMMENDATIONS ARE RESULT OF SURVEY

These recommendations came as the result of extensive research in the Gulf laboratories, which is being continued, Walsh explained.

In discussing some of these suggestions, Walsh pointed out that "the rate of chemical reaction of hydrocarbon oils may double for each 18° F. increase in temperature," and conversely, lowered temperature slows down such reactions.

A nozzle shield installed in a domestic gun burner "reduced nozzle temperature as much as

50° F. during heat soak periods following long 'on' cycles," he said.

"The rate of nozzle clogging due to fuel oxidation may be only one-eighth as much in this case. In tests with the shield an appreciable reduction in smoke was noted when air was permitted to enter inside the shield," Walsh added.

SERVICE CALL ANALYSIS

In his talk Walsh also presented an analysis of 33,650 service calls on domestic oil burners of both rotary and pressure types which occurred between Jan. 1, 1956, and April 30, 1957. Breakdown follows:

Nozzle assembly, 11.77%.

Stack control, 10.57%.

Water level and aquastat, 8.28%.

Fuel oil pump, 7.85%.

Soot in heater, 6.64%.

Motor trouble, 6.64%.

Forced air assembly, 6.10%.

Thermostat, 5.66%.

Electrical wiring, 5.66%.

Air and oil adjustment, 5.23%.

Out of oil, 4.03%.

Sludge and filter, 3.81%.

Ignition failure, 3.37%.

Oil line leaks, 3.27%.

Requested checkup, 2.73%.

Draft regulator, 2.18%.

Water leaks in system, 2.18%.

Combustion chamber, 1.85%.

Magnetic oil valve, 1.42%.

Other sources, 0.76%.

In Northern Illinois

Commonwealth Edison Plans Active Campaign To Promote Electric Heating

CHICAGO — Commonwealth Edison Co. announced it plans an active campaign for the promotion of electrically heated homes and apartments in Chicago and northern Illinois.

The announcement was made as the utility put into effect a new low rate for residential customers who install permanent electric space heating facilities.

For such customers the rate fixes a charge of 1¼ cents a kilowatt-hour for all electricity used over 500 kilowatt-hours a month. This is about 30% below the present minimum average residential rate of 2½ cents.

The new rate has been accepted by the Illinois Commerce

Commission. Like all of the company's rates, it is subject to a fuel adjustment clause.

It is expected that approximately 500 houses and apartments in the company's service area next winter will be using electricity exclusively for heating. Many more are in the planning stage, it was stated.

Gets Post Office Contract

NATCHITOCHES, La.—Bar-net Brezner of Alexandria, La., has been awarded a \$207,000 contract by the General Services Administration in Washington for air conditioning, extending and making other improvements at the U. S. Post Office here.



REVERE

DRYSEAL

COPPER REFRIGERATION TUBE

Not one but two crimps are made in each end of DRYSEAL. This is the final step in manufacturing, that immediately follows a special cleaning and dehydrating operation, which keeps dirt and moisture from entering the tube.

The seal is made in such a way that the diameter of the tube does not change, which permits DRYSEAL to be passed through any opening large enough for the tube itself.

As for bendability—the soft temper of the copper used in DRYSEAL allows you to make the most intricate bends by hand. And its ductility and soft temper make it extremely easy to flare for compression fittings without danger of splitting. Economical tube sizes range from ¼" to ¾" O.D.

Also you'll find the job-size, 50-foot one-coil pack easy to handle, light weight, economical.



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Founded by Paul Revere in 1801
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Mills: Rome, N. Y.; Baltimore, Md.; Chicago, Clinton and Joliet, Ill.; Detroit, Mich.; Los Angeles and Riverside, Calif.; New Bedford, Mass.; Brooklyn, N. Y.; Newport, Ark.; Ft. Calhoun, Neb. Sales Offices in Principal Cities, Distributors Everywhere.

LARKIN

means low prices!



LARKIN CEILING HUMI-TEMP

Price is only one factor in the selection of any product—especially one that has so important a task as protecting valuable perishables. Performance must come first. Quality cannot be overlooked. Durability is highly important. Larkin has all of these. And Larkin has low prices, too. Compare them and see for yourself how low they are.

For the latest Larkin price list, see your wholesaler. If you wish, write direct to us. We shall be glad to send you one.

Manufacturers of the original Cross-Fin Coil • Humi-Temp Units • Frost-O-Trol Hot Gas Defroster • Air Cooled and Evaporative Condensers • Cooling Towers • Air Conditioning Units and Coils • Direct Expansion Water Coolers • Heat Exchangers

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VOLUME 84, No. 16, SERIAL No. 1,534, AUGUST 18, 1958

"I have always felt that whatever the Divine Providence permitted to occur I was not too proud to report. The people are not served by pussyfooting, or by that sort of journalism in which nobody will ask who is the editor of a paper or the writer of an article, and nobody will care."—Charles A. Dana.

tories for Research and Development, which specialize in contract research for the Government and for industry, is among those institutions doing advanced work on thermo-electric projects. It has received substantial contracts from major companies in the air conditioning and refrigeration industries, among which are Carrier Corp. and Philco.

"Currently, electric housewares account for approximately one billion dollars worth of retail sales annually. Thermo-electric applications in this field easily can double that figure," envisions enthusiastic Chris Witting of Westinghouse.

Thermo-electric systems, like transistors, facilitate "miniaturization." They have another point in common with transistors: both are made from materials known as "semi-conductors."

Finding precisely the right mixture of elements to produce efficient semi-conductors proved tricky for developers of transistors, and the same difficulty is being encountered in the thermo-electric phenomena field.

Perhaps the best known semi-conductor with thermo-electric properties is bismuth telluride. Also promising are combinations of bismuth, tellurium, and selenium with traces of lead, silver, and antimony.

Everybody will be getting into this act eventually. And the long-run promise for our industry is spectacular.

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Coming: Heating and Cooling By Revolutionary Methods

MORE than a century ago a French physicist with the resounding name of Jean Charles Athanase Peltier discovered that the act of passing an electric current through junctions of two dissimilar metals creates cooling or heating effects, depending on the direction of the electric current.

Sooner thereafter a German physicist, Johan Seebeck, found that the reverse is true. If you heat or cool these dissimilar-metal junctions, electrical energy is generated.

So what's all this got to do with the price of air conditioners, home heating systems, refrigerators? Gentlemen, it may be sooner than you think.

For many years Gen. Sarnoff of RCA, in his annual reports to stockholders, has been predicting "electronic" refrigeration and air conditioning. People in our industry laughed at him for a long time.

"Oh, yes," they deprecated, "he's trying to make the 'Peltier Effect' practical. It will never work—at least, not in our lifetimes. Too cumbersome."

But, in January of this year, the writer heard an altered tune in Dayton, among other places. Engineers of the highly practical and certainly commercial Frigidaire Div. of General Motors, and Airtemp Div. of Chrysler Corp., admitted that "it has possibilities."

And, well, whaddaya know? Recently Westinghouse has been exhibiting and demonstrating experimental cooling-and-heating dinguses based on the "Peltier Effect."

All along the problem has been to find a practical and efficient way to utilize the Peltier-Seebeck principles in a device that would be reasonably compact. A large part of that dilemma revolves around selection of dissimilar metals which will be most efficient when conjoined.

Until recently, bimetallics employed in experiments and demonstrations required apparatus almost as bulky as an ordinary refrigerator compressor to produce a single droplet of ice—and even that little dab took an overlong period of time to freeze.

Apparently there has been a "break-through" in this area of research. For example, the combination bottle cooler-warmer demonstrated by Westinghouse is less than half a cubic foot in size, including its stand and controls. This device consists

of 50 junctions mounted geometrically around an anodized aluminum container. Assembly is surrounded by vertical aluminum fins for air cooling or dissipation of removed heat.

Additionally, Westinghouse is demonstrating an enclosed four-wheeled "hostess food serving cart." Central portion of the enclosed cart is a small refrigerator with a capacity of 2 cu. ft. Top section is a warming oven with a capacity of 1.3 cu. ft. which will maintain a temperature of 150° F.

To the advantage of compactness, proponents propose that a Peltier-type heater and cooler is free of noise and vibration, simple to control, capable of almost instant temperature change at the junctions, and immediately reversible so that the same current which produces cold can produce delivered heat merely by flicking a switch.

Moreover, further development of the Peltier thermo-electric principle can make possible an interesting series of entirely new products.

Some of those proposed include: a combination electric heating and cooling pad or blanket (low-cost air conditioned sleeping); refrigerated mixing bowl; portable refrigerator and range for camping and outdoor cooking; revolutionary thermos bottles; self-cooling highball coasters; economical photo developing trays; combination water coolers and hot water heaters; mothproof drawers and closets for furs and woollens.

If and when thermo-electric cooling and heating become commercially practicable, what we now know as a refrigerator probably will be separated into various types of cold storage drawers and cabinets distributed around the kitchen and other rooms, wherever their particular function could be useful.

How close is thermo-electric cooling and heating to commercial realization? Don't hold your breath, fellows, or quit your jobs or affiliations with compressor manufacturers.

But watch it.

Multiple-stage thermocouples producing ultra-low temperatures with relatively high efficiency could lead to air conditioning without compressors, condensers, evaporators. It is predicted, even, that auto air conditioning can be powered by thermocouples located in the exhaust pipe.

Philadelphia's Franklin Institute Labora-

SERVICEMAN—1958

Service Becomes Big Sales Feature as Industry Strives To De-Emphasize Price, Survey Finds

EVERYTOWN, USA—"Take a bath daily and change clothes often."

Beauty hint for milady? Not at all.

Hygienic advice was given to servicemen by Hotpoint Co., division of General Electric Co., who also suggested they carry their own soap and towels so they needn't bother customers after completing a job.

Servicemen Getting Tips from Customers

Pressured into studying Dale Carnegie's "How to Win Friends and Influence People," many of the 28 servicemen of dealer Stuart Greenley in Flint, Mich., actually are being tipped by pleased customers today.

All part of a resurgence in service—prompt, efficient service—reported recently by the *Wall Street Journal* in a cover story.

According to the *Journal*, the general slump in sales and resultant stiffer competition have brought on a "burst of concern from an industry often, and not always unjustly, accused of ignoring unsatisfied customers, bungling repair jobs, and padding charges."

Itemizing cross-country examples of this renewed manufacturer and dealer interest in service, the article stresses the industry's desire to de-emphasize pricing in its selling campaigns.

With fair trade pricing largely a thing of the past, the *Journal* states, one major price promotion weapon has been taken away from discounters.

"Hopefully," the article continues, "dealers are trying to shift advertising and promotion emphasis from price to service—with a smile."

When her regular dealer labeled her freezer "beyond repair," an Indiana housewife turned to another who serviced it simply by cleaning its condenser—and then sold her an automatic washer a couple weeks later.

In Highland Park, Ill., Highland Radio and Appliance Co. rushed a small portable refrigerator to a frantic mother concerned that her baby formula would spoil in a suddenly inoperative unit.

Emergency Help Leads To Freezer Sale

Two days later, according to Vern Cioni, who runs the company, "the woman came into the store, bought a new freezer, and was so grateful she also gave me a box of candy."

Manufacturers are advancing service in several ways, reported the *Journal*. Some are adding more instructors to their service staffs, others forming new classrooms and area schools. Educating housewives, designing units for easier repair, IBM inventory control of parts—all these approaches are being used.

For their part, dealers are installing two-way radio communication in service vehicles, sending their servicemen to training schools, or holding

classes themselves. Also they are creating service specialists, rather than hoping one man can service everything under the sun.

Results, apparently, have been gratifying. Reports show that dealers who render effective service seem to do better in sales than those who offer poor service or none at all.

Others are actually using servicemen to develop sales leads—a task which can be better accomplished if the serviceman is clean, and neat, and friendly.

Therefore the emphasis on soap, Carnegie, and clothes for servicemen.

Air Conditioners Have Backs to Corridor For Easy Servicing

FORT WAYNE, Ind.—Servicing and maintaining air conditioning units installed in the offices of the General Electric Co.'s Taylor St. plant here interrupts no office routine.

Most of the units in the long, narrow, three-story building have their backs to a corridor extending longer than a football field down the center of the building.

The maintenance man, making his rounds, never has to leave the corridor to do his work. A 1-in. plasterboard with Masonite cover segregates the units from the offices, effectively shutting off equipment noise from the employees working there.

William Cupp, president of Cupp, Inc., air conditioning contractor, installed 25 packaged

units in the building, which measures 316 ft. long and 44 ft. wide.

He spaced 16 5-ton and five 3-ton General Electric units along the 8-ft. wide central corridors on each floor. These units are recessed into the offices so that only 6 in. projects into the corridor. Each package distributes conditioned air through high wall ducts with a grille facing each window on the outer wall.

"This was done," Cupp said, "so that no matter how the office space may be partitioned in the future, every office will have adequate cooling."

As the offices face north and south, Cupp zoned the north and south sides separately, providing each with its controls. Taking advantage of the ven-

tilating system that formerly introduced fresh air into the corridors, Cupp installed three 7½-ton air conditioners in the pent house where the ventilating fan had been.

These units, one serving each floor, feed conditioned air to the three corridors. This conditioned air then serves as supply air for the packaged units.

"By doing this," Cupp declared, "General Electric was able to have this diversified air conditioning setup at less than a central system would have cost."

The 25th unit is a 10-ton package that cools the dispensary at the end of one floor.

All are water-cooled and are connected with a Binks 150-ton cooling tower on the roof.

Simplify Air Conditioning Control Panels with

RANCO "G" CONTROLS

Compact, Ranco "G" Controls were developed for air conditioning control panel designs to take less space, are easy to install and are readily adaptable to your specific product.

Ranco "G" Controls include both high and low pressure models with automatic or manual reset; low pressure cycling controls with (for factory use only) or without dif-

ferential adjustment; and dual pressure controls by pairing combinations of single controls. Three different switch assemblies provide ratings from pilot duty, intermediate to high ampere switching capacity in single pole, single or double throw action.

For further details call or write to Ranco Inc., 601 West Fifth Ave., Columbus 1, Ohio.

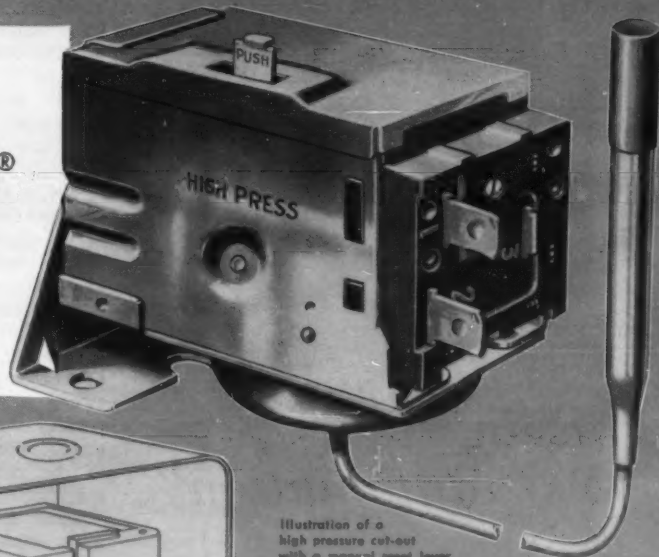
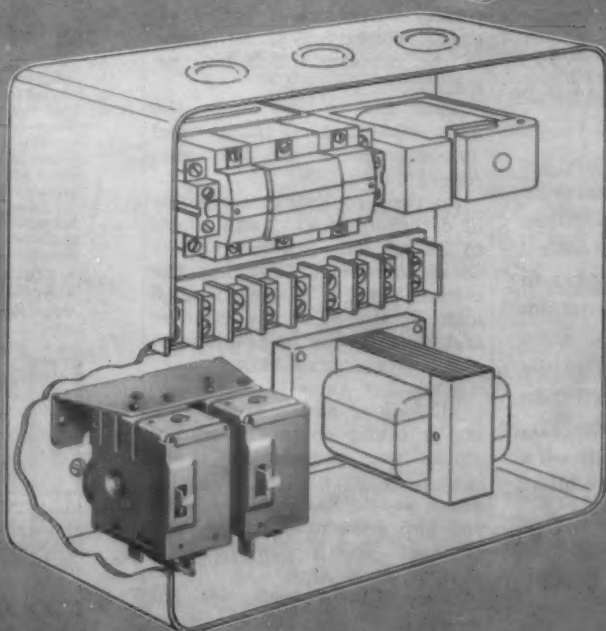


Illustration of a high pressure cut-out with a manual reset lever



- Automatic or manual reset.
- Switch assemblies for electrical ratings from pilot duty through 18 amperes, full load.
- 7 to 425 psi selective ranges, non-adjustable in the field.
- Screw or quick-connect terminals.

Panel installation of dual pressure with high and low pressure Ranco "G" Controls mounted on a common, single bracket and connected electrically by a jumper. Also, each can be individually mounted on separate brackets, according to panel space.

Report on Education --

(Continued from Page 1)

attention. This is a good time for each industry to evaluate its own training methods and results realized.

It is estimated that 100,000 persons are involved in the distribution, servicing, and maintenance of cooling and refrigerating equipment. At some 600 plants about the country, executives, engineers, technicians, production workers, and servicemen are daily involved in turning and improving products of the industry.

Where did these people get the education necessary for the positions they hold? What formal training is necessary for each level of employment?

Where is this training now available? How effective is it? How much does it cost?

What does industry think of the educational opportunities offered in air conditioning and refrigeration? What, if anything, are they doing about it? Do they want specialists or broadly trained personnel?

The NEWS has spent several months visiting, corresponding, contacting schools at all levels of the industry to get the

answers to these and related questions. We have covered engineering colleges, technical institutes and junior colleges, technical high schools, correspondence schools, manufacturers' schools, association courses, and contractor/labor-sponsored schools.

In addition, one-shot adult education courses have been investigated.

This series of articles will report our findings on such things as effectiveness of schools, subject matter covered, teaching techniques, human element (types of students and teachers), and industry cooperation, or lack of it, with formal education.

Emphasis Will Be On Technical Training

Emphasis will be chiefly on training at the technical level—both engineering and sub-engineering. Each of the types of schools listed above will be discussed from the viewpoints of advantages, disadvantages, cost, and effectiveness.

That education and training are extremely important becomes very obvious when one begins to investigate the "shortage" of engineers and servicemen in the field.

When one considers that an estimated 80% of all heating installations are considered defective in some significant way; that cooling service becomes

poor in promptness and quality during the season it is most needed; that the much-publicized need for engineers and trained people has reached mild mass hysteria—when these facts are considered, it is easy to believe that there is truly a shortage of qualified technical people.

In one bulletin Purdue university states that if this country doubled its present output of engineering graduates, it "still wouldn't be enough to fill the gap." Some 31,000 engineers graduated in all fields in 1956-57.

Yet, after only a few months of recession, graduating engineers are having a difficult time finding employment. Companies are no longer hiring spare engineers for short-term projects; number of interviewing companies at many colleges is down; in some areas the demand for engineering graduates is down 25%. Large consulting firms and some manufacturers have laid off engineers in great numbers.

In the cooling industry, company after company agrees in general conversation that there is an engineering shortage but holds that its own staff is quite sufficient.

"We could use a man of exceptional caliber," they all say, and one gets the impression that the only type of engineer shortage which exists is of that type of man who is pirated from one company to another.

80,000 Involved At Serviceman Level

At the serviceman level, there are an estimated 80,000 people involved. While in summer, there appears to be a shortage in numbers, for most of the year, it is difficult for newcomers to get positions (union or otherwise), and once more the shortage seems to be not of quantity, but of quality.

There aren't enough competent servicemen around; there's some question whether or not there aren't enough people around doing service.

Whether or not the shortage is real, the point is that the difference between a competent and incompetent serviceman, between a successful and unsuccessful businessman is knowledge. Knowledge of all facets of the industry which bear on his specific position.

Luck and in-laws aside, the man who knows things and knows people is the man who forges ahead.

So the problem becomes one of determining what and where to learn. This problem applies to the newcomer entering the industry and to the experienced man. It applies to the engineer and the salesman, the technician and the production man.

And they know it.

Millions of adults are attending or taking courses in trades, skills, and professions. Estimates indicate that 80% of these people have as a motive the improvement of their occupational status through increased knowledge.

Some 7,000 people are enrolled in air conditioning home study courses. Thousands more are enrolled in trade schools, technical institutes, high schools

—all seeking to learn more about some phase of the cooling industry.

Schooling definitely helps.

Technical institute graduates, for example, earn \$1,000 to \$2,500 more per year than the man with a straight high school trade school education.

Average College Grad Gets \$100 More Monthly

Those who obtain a college education either before or after entering the field will spend some \$6,000 getting it. But the average college grad gets \$100 more monthly than his high school counterpart—and the older the individual, the more spread between college and high school incomes.

The educational director of one manufacturer reveals that his company has realized a very tangible day-to-day benefit from training its dealer/servicemen. "When a man calls in on a trouble-shooting job, those who have attended our school are better able to describe their problems accurately and to understand better our phone diagnosis."

Minneapolis-Honeywell has found that its dealers benefit from training sessions in that they learn to reduce installation time, eliminate call-backs, and lose their fear of tricky controls they formerly shied away from. One manufacturer reported to M-H that control sales increased 30% among 25 students; rest of dealers increased sales only 3 1/2% in same year.

At factory training schools and in college seminars about the country, servicemen, salesmen, dealers learn to do their jobs better.

So there really is no doubt but that education is desirable and even necessary.

However, with so many schools and courses being offered—especially at the serv-

iceman level—why is there still a shortage of competent people? The industry has grown, true, but not so fast that this factor alone could account for the lack of quality in service.

Are manufacturers ignoring ways in which they can help themselves and the industry, in spite of their having factory and field schools?

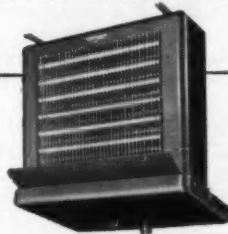
Is formal education, especially at the engineering level, failing to meet its responsibility to a growing industry?

To answer such questions, we will have to look at each of the several types of schools now operating to determine its place in the over-all picture.

(Next: Engineering Schools)

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The purchase price of any product is often misleading, for it precludes the cost of long-run operation. All Larkin products are engineered for the lowest possible operating costs, yet they are priced right. That's why Larkin leads the field for long-run, low-cost operation.

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"We're not agin' automation"

... but it has limitations. That's why these men are pouring Palmyron for Hubbell castings at Hubbell's Wisconsin foundry. This is one job that machines will probably never perform here. Why? Because it takes long experience and real craftsmanship to meet Hubbell standards for this critical operation. This is typical of the careful attention that goes into every component, because at Hubbell, quality has been and always will be more important than volume. "From castings to finished controls... every inch HUBBELL" is more than a slogan—it's a fact! Find out for yourself the next time you order refrigeration controls.



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BACK PRESSURE REGULATOR VALVES • DUAL PRESSURE REGULATOR VALVES • AUTOMATIC SUCTION STOP VALVES • SOLENOID VALVES • GAUGES • SAFETY RELIEF VALVES

"Castings to finished controls... every inch HUBBELL"

2,430 FROZEN FOOD PACKS

and two-side shopping in Warren's new Twin-Isle*!

Maximum capacity in minimum floor space was the problem presented to Warren by retailers everywhere, and 76 years of experience and research paid off again—with the space-saving, big-capacity Twin-Isle Merchandiser.

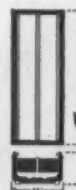
The Twin-Isle offers two-side shopping from two compartments—yet one refrigerator—holds 2,430 frozen-food packs or 2,160 pints of ice cream, and is only 58" wide over-all. Offers twice the variety of a conventional low-temperature display case!

Lower total investment in cases themselves, less comparable horsepower per lineal foot, installation costs cut in half, and a drastic reduction in cost of operation. Another fine example of product result from Warren's CONTINUOUS RESEARCH Program.

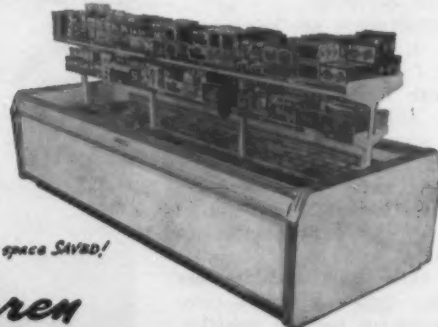
• COLORAMICS® Bands optional at no extra cost.

• Four-shelf merchandising canopies available.

*Patent Pending



this much floor space SAVED!



Warren Refrigerators

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EXPORT DIVISION: P. O. BOX 27804, LOS ANGELES, CAL.

Load: 10-600 lbs.

King Size Plant Offers King Size Problems

GREENVILLE, S. C.—Imagine, if you will, air conditioning one big room that covers most of the floor area of a seven-acre plant.

Put into that room some 1,500 sewing machine operators and mix with 500 cutters, inspectors, and steam iron operators.

Complicate with lint-filled air, both high sensible heat concentrations and high latent concentrations, and, because of large amounts of fresh air needed, refrigeration loads varying between 10 and 600 tons.

How would you handle the job?

This is what consulting engineer DeParx Stimson of Winston-Salem, N. C. did to provide year-round comfort conditioning for the Stone Mfg. Co. apparel plant here.

Stone's Cherrydale Div. is claimed to be the largest apparel plant in the world. It converts cotton and synthetic cloth into children's play wear and women and children's undergarments at the rate of about 75,000 dozen per week.

In solving these problems Stimson gave consideration to one central station air conditioning system with one 600-ton refrigeration compressor. However, inability of a single compressor to meet low demands without artificial loading and contamination caused by bringing all air to one return point, caused this to be ruled out.

Reduction of contamination by air-borne particles was accomplished by suspending horizontal Trane "Climate Changers" from the ceiling in central points of typical areas.

Control of conditions in the various load area was accomplished by the location of the Climate Changers, an adequate distribution duct system, wide modulation of steam input, and dual cooling coils in each Climate Changer with a modulating water circuit through each coil.

Three Trane "CentraVac" hermetic centrifugal water chillers are employed which "automatically answer the extremely variable cooling requirements."

Due to the fact that latent load in the steam ironing area or heat concentration in some other area may require cooling independently of the rest of the plant, six master control stations are located in representative areas to enable the automatic operation of the refrigeration equipment by any zone requiring it.

The rated capacity of the three CentraVacs is 100, 300, and 150 tons. They are arranged to permit the operation of the 100-ton unit for loads from 10 to 90 tons.

"At a load of more than 90

tons the 100-unit stops and the 300-ton unit starts and operates to its peak," Trane explained. "When the 300-ton unit is loaded, the 100-ton unit again turns on to supplement up to the combined capacity of the 300 and 100-ton units."

"Above the capacity of the two machines, the 150-ton CentraVac starts in to carry up to the total capacity of the three machines. The unloading sequence is in reverse."

Temperature is controlled by modulating steam valves on duct coils and operation of modulating chilled water bypass valves on each coil circuit in each Climate Changer.

"Each conditioner has two chilled water coils arranged to permit the modulation of water

flow through one, up to capacity, before the second begins to operate," it was pointed out. "The first coil to operate in the Climate Changer is the bottom one in order to prevent the flow of condensate from an upper coil to a bottom one and cause

evaporation into the air stream. "Temperature and humidity control at the Stone plant is so exact that any one of the six principal areas may bring a CentraVac into play for as little as 10 tons demand," Trane declared.

Holmes, Consulting Engineer, Steps Out on Own

LAFAYETTE, Calif.—Donald P. Holmes, mechanical engineer of 3131 Withers Ave. here, announced that he is entering private practice as a consulting engineer and will retain his Lafayette address.

A member of the American Society of Heating & Air-Conditioning Engineers, Holmes has long been associated with engineering of heating and air conditioning in the Bay Area.

Immediately prior to entering his own practice, he was chief mechanical engineer for Design Associates, Inc., architect and engineer of Concord, Calif.,

where one of his final projects was the design of air conditioning systems for the U. S. Post Offices at Stockton, Modesto, Merced, and Madera, Calif.

Kraft Expands Plant

NEW ULM, Minn. — Kraft Foods Co. announced it would expand its cheese processing plant here.

Bryant H. Prentice, Jr., general manager of Kraft's central division in Chicago, said the addition would house four bulk storage coolers, a finished goods cooler, and dock space.

Are You Paying Premium Prices For Your Pipe Wrapping?



Now...cut costs, reduce inventories and profit more with the one standard insulation that fits every pipe and fitting, meets every service requirement!

THREE INSULATING BARRIERS in NO Drip TAPE

1. OUTSIDE
Rough surface prevents free circulation of moisture-filled air — creates dead air barrier.
2. 1/4-INCH THICKNESS
Built-in moisture barrier assures utmost insulating efficiency.
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Dead air is trapped between "corrugated strands", forms added insulation barrier.

NoDrip Tape means more profit, less work on every job... saves you time, labor, material. NoDrip Tape eliminates most multiple wrappings needed with thinner wraps... inferior wraps.

Why pay more when you can buy the handy 16 foot roll of 1/4" thick NoDrip Tape at less than half the cost of a roll of ordinary 1/2" wrapping... and far below the cost of pre-formed foam cellular insulations?

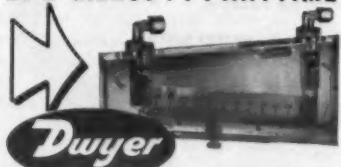
Next time an equipment cold line job

calls for permanent protection against condensation drip, "sweating" or frost, insist on using NoDrip Tape. Stops rust and corrosion, too... holds temperatures more constant and increases the efficiency of the cooling equipment. NoDrip Tape is pliable, cork-filled and completely self-adhering. Easy to work with... forms an air-tight, 100% vapor and moisture proof jacket. Needs no tools, vapor seals, fasteners, brads or adhesives.

Easier to Apply...
EVEN AROUND JOINTS, TEES, VALVES OR ANGLES



FILTER EFFICIENCY at a Glance... ANYTIME



AIR FILTER GAGE

With the Dwyer Air Filter Gage you can be sure of maximum filter efficiency because you know the exact time to replace filters, every time. Gives a continuous, accurate check that spots inefficient filters, yet prevents waste through premature replacement.

The Dwyer measures filter efficiency the only practical and economical way—via pressure drop. Quickly pays for itself through savings in replacement and service time and greater operating efficiency.

Break-proof plastic construction, lifelong accuracy, simple installation, no moving parts to ever wear out or get out of adjustment. Ranges 0-1/2", 0-1", 0-2" and 0-3" water. A complete unit with all necessary tubing, fittings, etc.

Write for Bulletin C10

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For large pipes, tanks, air ducts, we recommend NoDrip Plastic Coating for permanent protection from condensation, rust and corrosion. Another fine Mortell refrigeration product, NoDrip can easily be applied by brush or trowel to metal, concrete, brick, plaster, tile or composition surfaces.

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TECHNICAL CENTER

By Frank J. Versagi, Technical Editor

Oil Separators (1)

Let's take a look at oil separators.

Simply, of course, an oil separator is a cylinder or tank placed between the compressor discharge service valve and the condenser. Its function is to remove any oil entrained in the hot gas, collect it, then return it to the compressor. One type of separator does not collect oil at all, but returns it directly to the crankcase during compressor operation.

Oil Separators Also Act as Mufflers

Because of their design and performance characteristics, oil separators also act as mufflers—making a significant difference in noise level.

But some people don't like oil separators, wouldn't use them on a bet. After we take a look at the make-up of these separators, we'll consider some of the arguments for and against them.

The apparent need for an oil separator arises from the fact that every compressor passes some oil. If the pistons and cylinders are in good shape, the oil will be in the form of a very fine mist traveling with the discharge gas. If the compressor is worn, larger droplets of liquid

oil may be carried along with the gas.

If allowed to continue, the reasoning goes, this continual removal of oil from the compressor can reduce the oil level in the crankcase to a harmful level, and the oil which has left the compressor can cause varied difficulties in other parts of the system.

In typical operation, the hot gas, carrying oil, enters the separator and is forced to impinge upon engineered baffles and filters in such a way as to change its direction and reduce its velocity significantly. Total effect of impingement is to cause the oil droplets to fall out of the gas stream.

"Take the normal air hose found at an auto service station," suggests Bill Pollock, service manager of Temprite Products. "Play the air over your hand and drops of water will collect. This demonstrates the effect of impingement."

Simultaneously the filter removes sludge and dirt traveling with the discharge gas.

The changes in direction and the increase in volume from the discharge line to the larger oil separator also reduce pulsations and noise levels, so that an oil separator serves as a fairly effective muffler.

Most oil separators are designed to trap and collect the

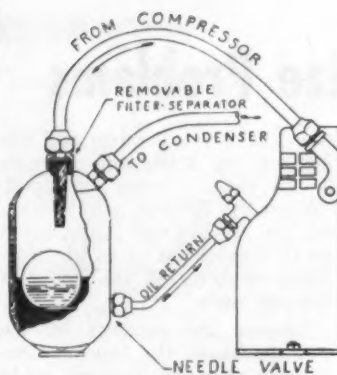


FIG. 1—Float-type oil separator. (Courtesy Wabash Corp.)

oil which is removed from the gas flow. When the collected oil reaches a certain level, it actuates a float valve which allows excess oil to return directly to the compressor crankcase. The necessary push comes from the pressure exerted by the still superheated refrigerant vapor above the oil pool.

It is important, naturally, that temperatures in the oil separator maintain at least a couple degrees superheat to avoid condensation of refrigerant. Should refrigerant condense, it is conceivable that it could slug back to the crankcase when the float valve opens.

Oil Separators Insulated

To avoid this, oil separators are insulated sufficiently well to keep the necessary couple degrees of superheat during the off-cycle of the compressor. Where oil separators must be used in low ambients—below 45° F.—auxiliary heaters should be used around the oil separator.

Since even the best of systems contain some sludge and dirt, the outlet from the oil separator to which the oil return line is connected is a good distance above the bottom of the separator. The idea here is to allow the sludge to settle to the bottom, and only clean oil actually returns to the compressor. Fig. 1 shows a typical float-type oil separator.

On larger sizes it is necessary to add oil to a system to prevent a lowering in crankcase oil level to fill the separator reservoir.

Holding that float control valves are subject to hanging open or sticking closed, Heat-X, Inc., has designed an oil separator which operates instead on what they call a velocity pressure mechanism, Fig. 2.

Except for the small amount of oil in the oil well, no oil is collected, in this design. Instead, all oil separated by impingement and filters is returned directly to the compressor while the compressor is running. It is the velocity of the discharge gas which opens the mechanism; it closes of its own weight when the compressor stops.

Answering a question of the problem of sludge, R. E. Comstock, chief engineer of Heat-X, held that any solid sludge would be trapped in a fine oil return screen in the valve mechanism. Comstock also pointed out that, "in the positive velocity pressure mechanism, there is no possibility of building up liquid refrigerant and slugging it back to the compressor."

To which proponents of the float-type oil separator answer that refrigerant slug-back is no problem on properly installed

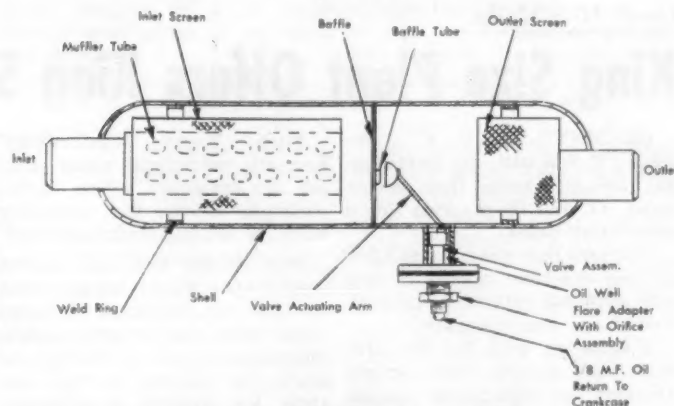


FIG. 2—"Velocity-pressure-type" oil separator. (Courtesy Heat-X, Inc.)

and engineered systems.

Returning for the moment to the subject of sludge, to our knowledge no used oil separator has ever been opened which did not contain some dirt, grease, and goo. The News had a sample of this sludge analyzed and received the following report.

"High concentration of zinc and aluminum, tin and lead, iron, and silicon—most of these both dissolved in the oil and as finely divided particles. Surmise that zinc and aluminum combination as well as tin and lead pair are from alloys and solders used in the system. Presence of iron is easily accounted for. Presence of high concentration of silicon indicates a lot of grit and dirt.

"In addition to metallic ele-

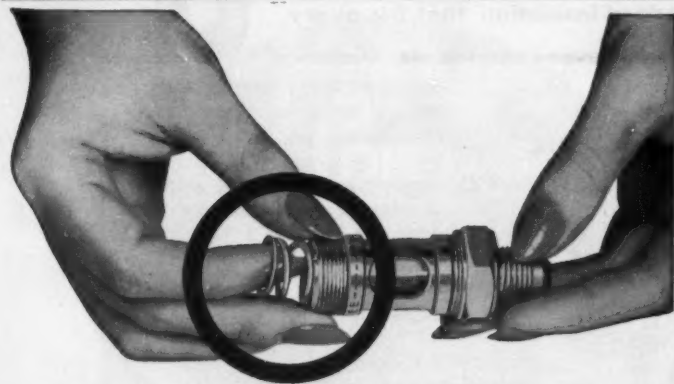
ments, there were carbonized oil, traces of waxes and resins."

While much of this foreign matter will be trapped on filter-driers, proponents of oil separators insist that many of the extremely fine particles will pass right through the drier and that only the impingement effect possible in the hot gas line will effectively remove them.

In principle, the hot gas leaving the oil separator will be oil free and will cause no trouble in other parts of the cycle. And the trapped oil, cleaner than when it left the compressor, returns to the crankcase where it belongs.

That, briefly, is how an oil separator works.

(To Be Continued)



SHE'S PUTTING SPRINGS IN E-Z-SEE LIQUID INDICATORS

To you, E-Z-See liquid indicators with spring compensated gaskets mean NO LEAKS—with Refrigerant 12 or Refrigerant 22—at operating pressures through 500 p.s.i. and operating temperatures up to 200° F. and down to minus 40° F!

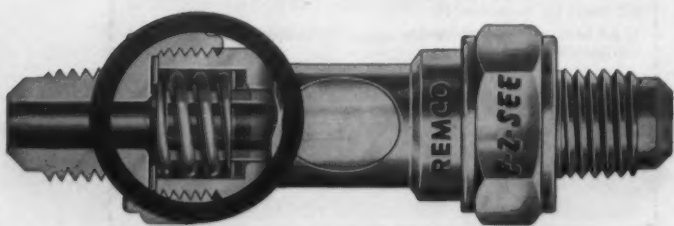
Double port, easy to see through, spring compensated E-Z-Sees are available with male flare x male flare, male flare x female flare and with extended sweat connections which permit soft or silver soldering without disassembly.

E-Z-Sees are also available with a very sensitive FLO indicator flap directly in the refrigerant stream. With this sensitive flap all variations in flow are instantly indicated.

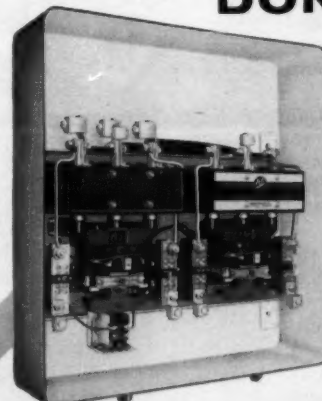
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Air Conditioning and Refrigeration News
450 W. Fort Street Detroit 26, Michigan

Refrigeration Problems And Their Solution

(As Written by Paul Reed)

The late Paul Reed, one of the refrigeration industry's most respected writers and teachers, wrote a column on "Refrigeration Problems and Their Solution" which was published regularly in AIR CONDITIONING & REFRIGERATION NEWS for more than 15 years.

Readers throughout the years have hailed this written material as some of the most practical and helpful that has ever been published. Fortunately, the author had an opportunity to revise some of this material and the NEWS is currently re-publishing it.

Sweating Around Doors of Backbar

QUESTION:

We would like to overcome a complaint of a sweating condition around the doors of a stainless steel backbar, on highly humid days. The inside of the doors and cabinet has Formica strips. The frame is wood and the cabinet and doors are insulated with Fiberglas. The interior of the cabinet and of the doors is of stainless steel. The doors have a good rubber gasket that fits tightly.

There is a curved blower coil facing the doors, so we recently placed a diffuser in front of the doors to keep the cold blast of air from striking the doors, and we are now waiting to see if this will help.

ANSWER:

Sweating of the refrigerator around the doors is a common complaint, and it is caused by just one thing: the outer metal is colder than the dewpoint temperature of the outside air. On days when the air is fairly dry, its dewpoint temperature is low—low enough to be below the temperature of the chilled outer surface of the refrigerator.

On moist days, the dewpoint temperature of the air is above the temperature of the chilled outer surface of the refrigerator, so moisture condenses out of the air on to the cool metal; for it will be remembered that the dewpoint temperature of the air is the temperature at which moisture starts to condense out of the air.

To prevent "sweating," which is moisture condensed from the moist air, the outer surface must always be kept above the dewpoint temperature of the air.

The outer metal becomes chilled from the cold temperature inside the refrigerator, so it becomes a matter of keeping this outer metal from becoming chilled below the dewpoint temperature. It is not too difficult to do this in the case of most of the outer shell of the refrigerator, for it is merely a matter of using enough insulation to prevent the outer shell from being chilled by the cold inside.

It is much more difficult in the case of the metal around the doors, for three main reasons.

AIR LEAKS OUT THE DOORS

1. In a backbar, the service is frequently heavy, especially if as true in many taverns, bottled beer is served from the backbar.

With the blower coil arranged to blow the cold air toward the doors, the cold air is blown out of the doors every time the doors are opened. This cold air tends to chill the outer metal of the cabinet around the doors.

It would help somewhat to rearrange the coil so that it blows its cold air away from the doors. In a food cabinet, it is better to arrange the coil so that the air entering the refrigerator when the door is opened is drawn through the coil before it can strike the food. In this way, the cold coil reduces the moisture content of the air before it strikes the food. If the warm, moist air strikes the cold food first, moisture is condensed on the food and causes it to be slimy.

This makes little difference in the case of bottled goods, however. Nevertheless, there would be less likelihood of sweating around the doors if the coil air were blown away from, instead of toward the doors. The diffuser you mentioned should help this condition materially.

If the door gasket is tight, there should be little leakage of cold air

out of the doors when the doors are closed. Nevertheless, the cold air blast against the doors certainly makes it more difficult to prevent cold air leakage past the gasket.

INSULATED 'BREAKER-STRIP'

2. There must be some sort of material connecting the outer shell and the inner liner at the door openings, and this applies also to the inner and outer metal on the doors themselves. There must be some sort of hard, durable material to give strength, to withstand usage, and to seal against moisture getting into the insulation.

If we were to let the inner and outer metals overlap or touch one another, there would be a good path for heat flow, so the outer metal would be quickly chilled. Therefore, the two edges of the metals should be kept as far apart as possible, and the strip of material joining them (called a breaker-strip, for it breaks the flow of heat between the metals) must be a reasonably good insulator.

The material that you are using is a good one for a breaker-strip.

However, you might check the amount of overlap of the edges of the two metals. Maybe they are closer to one another than is necessary.

LACK OF INSULATION

3. Some sort of framing (in your case wood) is necessary at the door opening and in the door. Dry wood is a fairly good insulator, but not as good as the rest of the insulation in the wall of the cabinet, so it offers less resistance to heat flow. Consequently there is more likelihood of the outer metal near the door openings being chilled than the metal which is farther away from the door openings.

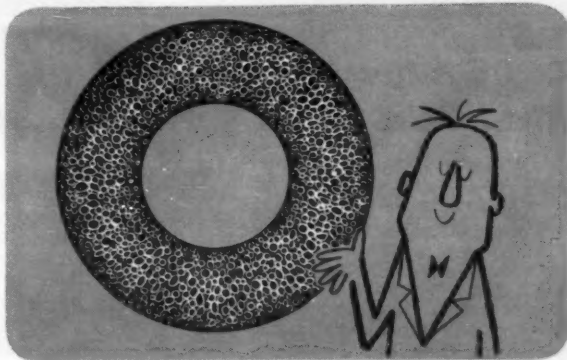
You mention that the blower coil blows air directly on the doors. This aggravates the sweating condition, for it tends to chill the inner liner around the doors lower than if the coil were mounted elsewhere in the cabinet in such a manner that the air passing the inner part of the cabinet near the doors would be return air to the coil, and, therefore, somewhat warmer, and with lower velocity.

The diffuser that you have installed will tend to lower the velocity of the cold air striking the doors and will probably help somewhat in overcoming the sweating. As mentioned in (1), it would be preferable to rearrange, if possible, the blower coil, so that the cold air from the coil blows away from the front of the cabinet.

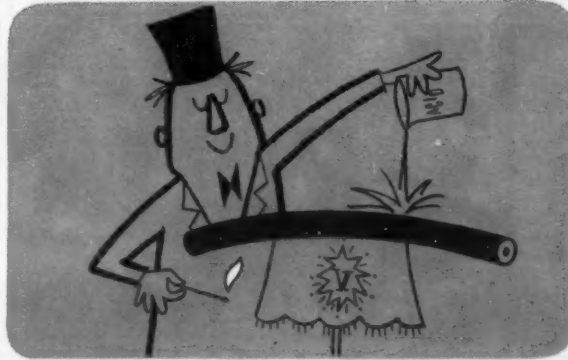
It has become quite common for manufacturers to use low voltage, metal-sheathed electrical resistance cable imbedded just under the outer metal around doors or other places which it is difficult to keep warm and which, therefore, sweats. The electrical resistance cable warms the metal just enough to keep it above the dewpoint temperature of the air. It does not take a great deal of heat to accomplish this, therefore the wattage used is low.

This method is especially effective on low temperature cabinets and open self-service cases, on which, because of the low temperatures, it is particularly difficult to keep the surfaces warm enough to prevent condensation.

New pipe insulation ends condensation problems...cuts labor costs sharply... preformed **VASCOCEL**[®] TUBING AND PIPE INSULATION



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Vasco-Cel insulation gives extra safety, too. Made from self-extinguishing material that will not feed a fire—cannot carry flames along pipes from room to room. It is resistant to acids, oil and fungus.



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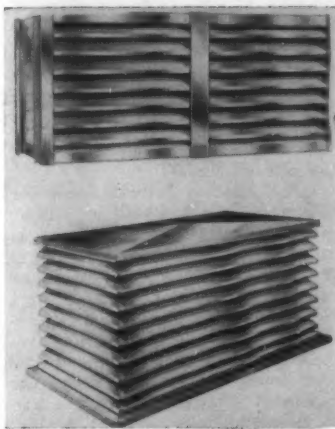
Vasco-Cel is the newest in a complete line of insulation products for refrigeration. Get Vasco-Cel, Permagem Slugs & Cords, and Presstite Tape from your nearest "Virginia" wholesaler. For complete information, write Refrigeration Division, VIRGINIA SMELTING COMPANY, 194 Jefferson St., West Norfolk, Va.

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Van Noorden Offers Louvers, Louver Penthouses

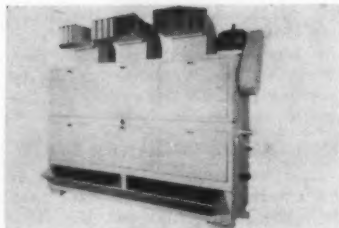


A new line of extruded aluminum, weathertight louvers and louver penthouses has been introduced by E. Van Noorden Co., Dept. AC&RN, 118 Magazine St., Boston.

Both louvers and louver penthouses are available in three types: standard stationary, storm-proof stationary, and adjustable.

Exclusive Vanco vertical gutter with controlled return prevents drippage or penetration of water from outside.

In stormproof type, baffles at middle and top of blades give added protection. In adjustable type, blades may be operated by hand quadrant or by chains with spring release.

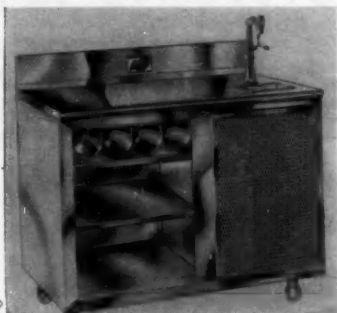


New 'Krack' Units for Heavy Duty Uses

A new series of unit coolers for heavy-duty refrigeration have been developed for the food processing, packing house, warehouse, produce, and meat industries by Refrigeration Appliances, Inc., Dept. AC&RN, 903 W. Lake St., Chicago 7, manufacturer of the "Krack" line of refrigeration equipment.

"The units, designed for use with 'Freon,' ammonia, or flooded ammonia, above or below freezing, have capacities ranging from 1,240 to 26,700 B.t.u.h. per 1° T.D.," the announcement said. "The face area of the largest unit measures 46 sq. ft."

"Designed for floor mounting, fans in the new units deliver from 4,020 to 27,600 c.f.m. of air. The centrifugal fans are hot dip galvanized and are statistically and dynamically balanced."



Lern Offers New Water Cooler Stations

A line of self-contained water cooler stations is currently being manufactured by Lern, Inc., Dept. AC&RN, 1455 W. Hubbard St., Chicago 22.

Employing a Temprite water chiller, the units have 10 to 15 g.p.h. capacity. They are powered by a ¼-hp. hermetically sealed unit using "Freon-12." Dual thermostatic controls prevent freeze-up.

Basic model is 24 in. long, 36 in. high, and 24 in. deep.

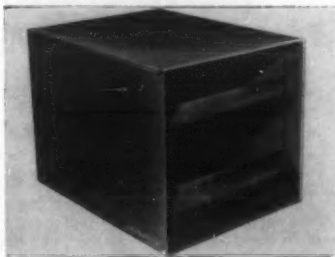
In addition to the basic model, there is a basic unit with adjustable shelf superstructure, a combination unit with silverware bins, a combination unit with refrigerated base, a combination unit with shelves, and under-counter unit with insulated ice bin.

Uni-Silencer, Uni-Resonator Cut Fan Noise

"Uni-Silencers" and "Uni-Resonators" to reduce the air-borne noise generated by fans have been designed by Elof Hansson, Inc., Dept. AC&RN, 711 Third Ave., New York City 17.

They measure only 24 in. by 24 in. by 32 in., weighing 75 lbs. each. Uni-Silencers are acoustically efficient and may be applied to a conventional pressure or high pressure air conditioning ventilating system.

When the airflow, pressure drop, and noise problems involved require the use of more than one Uni-Silencer, then individual units are put together side by side and/or on top of each other using the slip joints provided on the units. In this manner the Uni-Silencer are put together in series



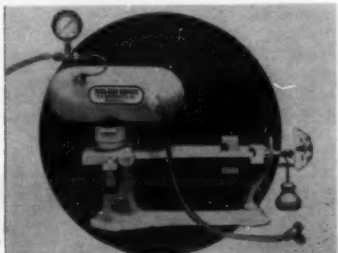
or parallel to fit almost any condition and requirement.

Uni-Silencers are effective because they include high frequency labyrinth as well as low frequency attenuators, Hansson says. All interior and exterior surfaces are smooth, perforated, or unperforated steel reducing the pressure drop to a minimum.

Charging Unit Weighs Liquid, Vapor Refrigerant

Claimed to be a completely new concept in introducing refrigerants into cooling systems the "Cool-Rite" exact charge scale was recently introduced by Cool-Rite Service, Dept. AC&RN, 124 Brunswick St., Newark, N. J.

It utilizes a delicately balanced scale to weigh, instead of measure, both liquid and vapor refrigerants to within ¼ oz. accuracy.



Manufacturer says need for calibrating a glass or checking frostback is eliminated. Scale is unaffected by temperature or pressure.

Operator merely hooks scale into cooling system, sets the beam for desired weight, and is assured accurate charge within a few seconds. Because refrigerant is introduced directly from scale into unit, there is no loss of refrigerant.

Standard 6-lb. scale is available in white (R-12) and green (R-22) for \$59.95. A 15-lb. scale sells for \$77.95.

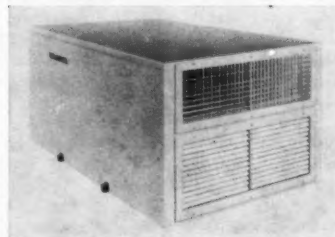
Condaire Unit Claims Double Air Power

A new self-contained central air conditioning unit with double air power condensing coil has been introduced by the Williamson Co., Dept. AC&RN, 3500 Madison Rd., Cincinnati 9.

Known as the "Condaire," it flows twice the normal blower capacity through the refrigerant condensing coil, yet employs only one condensing air blower, the company said.

With two centrifugal blowers and two blower motors (one each for cooled air distribution and one each for refrigerant condensing air), the Condaire presents a totally new concept of air conditioning, according to the manufacturer.

Currently offered in 2 and 3-ton



models, it will soon be made in units of higher capacity, the company said.

Air supply and return connections are of new simplified Williamson "Seal-Tite" design. Units are factory pre-wired.

McQuay Introduces 2 'Space Saver' Models

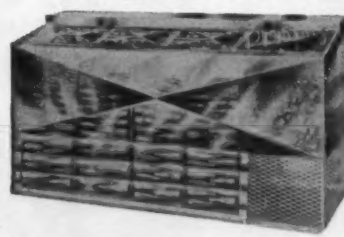


N. E., Minneapolis 13, Minn.

The normal temperature "Space Miser" is available in four models from 1,000 to 2,300 B.t.u.h. @ 10° T.D., and is designed to balance with nominal ⅓, ¼, ½, and ⅝-hp. condensing units, according to McQuay.

The low temperature Space Miser is available in three models from 1,400 to 2,800 B.t.u.h. @ 10° T.D., and is designed to balance with nominal ⅓, ½, and ¾-hp. low temperature condensing units. It automatically defrosts when combined with an electric timer and a four-way valve.

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Terminal leaks on sealed units are stopped instantly and permanently with WATSCO Terminal Seals. All work is done from the outside of the dome, and no special tools are required. Do it right on the job.

WATSCO Terminal Seals are packed three to a set and complete with all washers, gaskets, and complete instructions.

Packed with every Terminal Seal kit . . . a special locking nut, complete with instructions, to facilitate removing corroded and tight nuts . . . without twisting or damaging the terminal post.

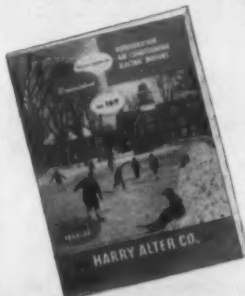
U.S. Pat. No. 2,451,701

"ANNOUNCEMENT TO THE TRADE"
Please take notice that infringers of Patent No. 2,451,701, covering our terminal replacement for sealed refrigeration units, will be prosecuted to the fullest extent permitted by law. This announcement is addressed not only to manufacturers of infringing terminal replacements, but also to those who sell, distribute or use them.
(Signed) WATSCO, INC.

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Truck-Aire Offers Home, Commercial Units



Introduction of a new line of air conditioners for home and commercial installations has been announced by Truck-Aire Furnace Co., Dept. AC&RN, 2045 Evans Ave., San Francisco.

"The line includes remote con-

densing units in 3, 5, and 7½-hp. sizes, designed for installation remote to the evaporator; self-contained package units with cooling capacities of 22,050 and 35,850; and a reverse cycle air conditioning unit (heat pump) with a cooling capacity of 35,850 and a heating capacity of 38,300," the announcement stated.

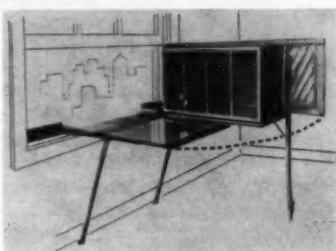
Air-cooled remote condensing units are designated as models 31-RCS, 33-RCS, 31-RCD, 33-RCD, 51-RCD, 53-RCD, and 83-RCD; the self-contained package units, 21-SC (utilizing one compressor) and 31-SC (two compressors); and the reverse cycle system, model 31-HP.

Window Unit Mounting Meets Clearance Code

A new room air conditioner mounting that will allow the unit to be moved completely inside the room and then swung 90° to left or right of the window is being manufactured and distributed by L & P Electric Co., Inc., Dept. AC&RN, 684 Bedford Ave., Brooklyn 11.

Called the "Du-all," the mount is designed to meet local ordinances that require a 21-in. clearance for window cleaners.

Du-all kit consists of a base and window seal, both prefabricated.



It has been approved by the New York State Board of Standards and Appeals.

Coolerator Reduces Dehumidifier Dimensions



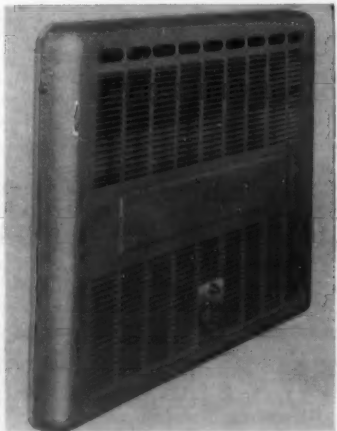
New styling and reduced dimensions feature the 1959 dehumidifiers announced recently by Coolerator Div., McGraw-Edison Co., Dept. AC&RN, Albion, Mich.

Over-all dimensions have been reduced by 7½ in. in height, ½ in. in width, and 2½ in. in depth from 1958 models.

The dehumidifier, which can remove up to 3 gals. of water a day, is available in the "Super" model with manual control or the "Custom" model with humidistat.

Both models are equipped with hose connection fittings for attaching standard ¾-in. garden hose.

New Line of Recessed Convectors Introduced



A new line of recessed convection electric heaters with outputs up to 10,246 B.t.u. is now being offered at considerably reduced prices by Circle-Air Industries, Inc., Dept. AC&RN, 244 Herkimer St., Brooklyn 16.

Back to back mounting of "black heat" elements packs more heat into smaller size units. Units

ranging from 500 to 3,000 watts, protrude only 2 in.

Patented double-wall construction sets up a secondary flow of heated air, producing more heat per kw., according to the company.

FOR MORE INFORMATION ON THE PRODUCTS DESCRIBED ON THIS PAGE

Write Directly to the Company—at the Address Given in the News Item



Foam Producer Pumps 30 Lbs. Per Minute

Portable polyurethane foam producing equipment that will deliver up to 30 lbs. of foam per minute is being manufactured by the Martin Sweets Co., Dept. AC&RN, 114 S. First St., Louisville 2, Ky.

With a spray gun, it will spray on vertical surface in depths of up to 2 in. with one spray pass. Spraying is possible in excess of 20 lbs. per minute.

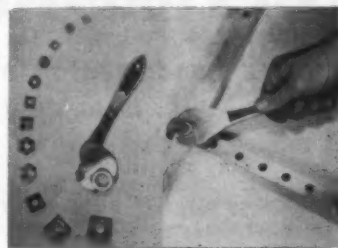
Rotary pumps are reversible, permitting material to be pumped back into tanks from hoses and entire system, preventing waste. It also permits thorough flushing with solvents.

Remotely controlled recirculate valves permit intermittent, one man operation.

Flick of Wrist Tightens, Loosens Wrench

Just a flick of the wrist is all that is necessary to tighten or loosen the new "Flikit" instant grip automatic wrench introduced by the Cushman Corp., Dept. AC&RN, 1228 Utica Ave., Brooklyn.

By placing the wrench on the nut and turning the handle, jaws automatically tighten. Wrenches come in three sizes, each handling all types of nuts.



Frigidaire Adds 20-Cu. Ft. Freezer



A 20-cu. ft. upright food freezer with frozen food storage capacity of 700 lbs. has been added to its 1958 line by Frigidaire Div., General Motors Corp., Dept. AC&RN, Dayton 1.

The new Deluxe freezer (UFD-200-58) features "zero zone" storage on five full-width shelves, four of which are refrigerated for fast, sharp freezing and one adjustable to three positions. Also there are two roll-out, removable baskets at the bottom of the storage compartment.

The door is equipped with five full-width shelves.

Edwards Airvec Supplies 90 Tons Of Air Conditioning To New Bowling Center

EDWARDS Airvec Condenser Utilizes Convection Principle. Eliminates Noise, Motors, Maintenance, Structural Problems.

Heat rising from the horizontal condenser creates a chimney-like draft that continues to draw fresh air through the unit. Manufactured in 2, 3, 5, and



7½ ton basic sections, which then can be assembled in multi-sections for unlimited capacities up to hundreds of tons.

This principle eliminates: Noise, Motors, Wiring, Maintenance, Operating Problems. WRITE Airvec Dept.,

Edwards Engineering Corp. Manufacturers Agents Inquiries Invited. CO-AXIAL FREON CONDENSERS

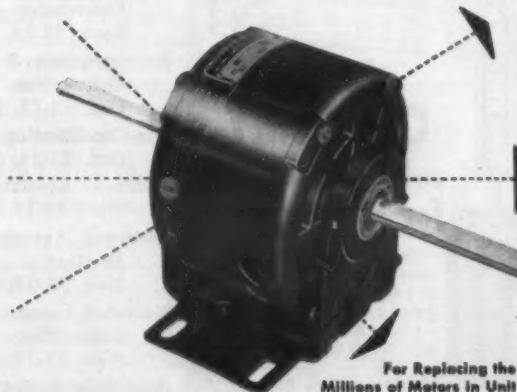


- COST REDUCED 30% to 40%
- CONDENSER WATER REDUCED 35%
- Refrigerant Charge Reduced
- Stabilizes Capillary Performance
- Smaller Cooling Towers Required
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For Replacing the Millions of Motors in Unit Air Conditioners of ½ through 2 Horsepower

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Also available without mounting base for use with gas.

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Convention
Dec. 1-4, Cleveland.

Carrier To Furnish Refrigeration, Cooling For First Nuclear-Powered Surface Vessel

SYRACUSE, N. Y.—A contract for air conditioning and refrigeration equipment for the world's first nuclear-powered surface vessel, the Nuclear Ship *Savannah*, designed for worldwide travel without refueling for three and one-half years, has been awarded to Carrier Corp., Charles V. Fenn, vice president, announced.

The N. S. *Savannah*, a \$31 million passenger-cargo ship now under construction at the Camden, N. J. yards of New York Shipbuilding Corp., will be equipped to provide both cooling and heating comfort for 60 passengers and 130 crewmen in water from the Equator to Arctic regions.

Additionally, for a payload of 9,500 tons of cargo, it will offer refrigeration equipment in cargo holds and in storage areas for the ship's food supply. Both air conditioning and refrigeration equipment have been planned in consideration of the fact that layover in various ports will not require any time for fueling until the ship has journeyed some 300,000 nautical miles.

Fenn reported that the air conditioning equipment will be centered around use of a centrifugal refrigeration machine of

210 tons' cooling capacity.

The unit will supply chilled water, which will be piped into the air conditioning system to provide temperature and humidity control. Even the operating area of the ship will be air conditioned, Fenn pointed out, contrasting with the humid, high-temperature boiler rooms in which crewmen work on steam-driven vessels.

"The room adjacent to space occupied by the reactor, turbines, and other machinery will be a 'white collar area' on the N. S. *Savannah*," Fenn declared. "It is planned that provision will be made to permit passenger visits to the nerve center of operations—an innovation, for boiler and engine rooms aboard ships are usually off limits to travelers. The visitors will find this area cool and comfortable."

In addition to the air conditioning, the Carrier contract calls for reciprocating-type cooling units, to maintain temperatures from 0° to 45° F. in nine cold storage rooms for preservation of meats, dairy products, fish, vegetables, and beverages.

The 596-ft. N. S. *Savannah*, with cruising speed of 20 1/4 knots per hour, will be in regular service by early 1960.

MEN on the MOVE

Patterson-Kelley Co., Inc. (East Stroudsburg, Pa.)—Appointment of FRED J. WATT as assistant to the president has been announced. He will be responsible for original equipment sales of refrigeration and air conditioning equipment, plus the company's general line of heat exchangers. He was previously manager of Worthington Corp.'s central station and ammonia equipment section.

Industrial Hose Div., Flexonics Corp.—EUGENE RANSOM has been appointed general manager. He has been on special assignment at Flexonics' Memphis, Tenn. plant. He succeeds E. W. DRIEDGER, resigned. JAMES R. STROTHER has been named sales manager.

Copeland Refrigeration Corp.—EDWARD J. CZARNECKI has been named production control manager and J. BERNARD GOODWIN will serve on the production staff, special assignments. Czarnicki was formerly associated with Studebaker-Packard Corp. and Utica-Ben Corp. Goodwin recently served as production manager and chief engineer of C. Nelson Co.

C. V. Hill & Co., Inc.—CURTIS J. PURGERSON has joined the Los Angeles branch in Glendale, Calif. and will cover West Los Angeles, Hollywood, Beverly Hills, Belair, and Westwood. He has moved his family from Dobbs Ferry, N. Y., to Beverly Hills.

Industrial Acoustics Co., Inc.—RICHARD A. HEINDEL, formerly product manager of Joy Mfg. Co., has joined the Air Conditioning Dept. as assistant manager in the engineering, design, and promotion of noise control products in the air conditioning and ventilating field.

Quincy Products Co. (Quincy, Mich.)—J. S. FURRY has been appointed chief sales engineer. His position will encompass engineering sales functions and coordinate activities of manufacturing representatives. Furry was administrative assistant to the director of engineering for Midwest Mfg. Co.

Now Representing...

Recold Corp.—FLOYD E. FISHER of Kansas City, Mo. has been appointed a representative of Recold refrigeration and air conditioning products in the western part of Missouri and Arkansas and in eastern Kansas.

Custom-Temp Corp. (Liberty, N. Y.)—SULLIVAN COUNTY (N. Y.) PLUMBING & HEATING SUPPLY CORP. has been named wholesale distributor for the Custom-Temp line of air conditioning, cooling, and heating equipment.

Barnebey-Cheney Co.—Three new sales representatives have been appointed to handle the Barnebey-Cheney line of air purification equipment. They are R. M. TOUCEY, Pittsburgh; HAROLD O. KNAPE & CO., Dallas; and L. R. GORRELL, Raleigh, N. C.

Heat Controller, Inc. (Jackson, Mich.)—Sales representatives for the "Comfort-Aire" central air conditioner product line include the JACK CAHILL CO., Cincinnati, named representative in Ohio; WILLIAM J. MEEK, Charlotte, N. C., covering North and South Carolina; and GUY W. GENTRY & ASSOCIATES, Oklahoma City, covering Oklahoma, Arkansas, and Kansas.

Baltimore Aircoil Co., Inc.—Newly-appointed exclusive representatives are DONOVAN ASSOCIATES of West Hartford, covering Connecticut, western Massachusetts, and Vermont; ENGINEERED EQUIPMENT CO. of Kansas City, Mo., covering western Missouri and Kansas; and R. M. TOUCEY of Pittsburgh, covering western Pennsylvania.



Crew Cooler for a Bomber

SITTING next to pretty Judy Mowbray on the ice pile is one of the air conditioning units she helps make at the Stratos plant at Bay Shore, L. I. The unit keeps crew members of a Boeing B-52 from getting overheated as they race through the stratosphere in their eight-jet bomber. It would take a pile of ice many times the size of the one keeping Judy cool to equal the refrigeration capacity of the unit.

Region 4 ASRE Meeting Set for Montreal Sept. 12 to 13

MONTREAL, P.Q., Can.—Technical tours and seminars on the 1,200-ton air conditioning system in the new Queen Elizabeth hotel here will highlight the fifth annual region IV conference of the American Society of Refrigerating Engineers.

The conference will be conducted in the hotel on Sept. 12 and 13 with the Montreal section of ASRE as host.

A technical paper on ice rinks will also be presented.

Social features of the conference include a golf tournament, a tour of Montreal's night clubs, a French Canadian Habitant dinner, and banquet and dance.

Drinks and transportation are included in the \$30 packaged price, according to Dave Harvey, publicity chairman.

Victory Metal--

(Concluded from Page 1, Col. 5) crease" in the firm's commercial refrigerators, plus the need for additional space for the manufacture of a new line of products in allied fields including rotisseries, walk-in coolers, water coolers, chefs' refrigerators, and milk dispensers, are the principal reasons for the contemplated expansion, it was indicated.

Victory Metal Mfg., maker of all-metal reach-in refrigerators, has its main office and factory at Plymouth Meeting. The latter is a two-year-old, million-dollar, streamlined plant of over 100,000 sq. ft. of space on one floor, the company noted.

MIGHTY MITE Thermal Protectors

ARE **CHEAP**

Insurance Against Motor Burn-outs

MECHANICAL INDUSTRIES PRODUCTION CO.

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Holland Furnace--

(Concluded from Page 1, Col. 4)

plaints were unavoidable incidents experienced in every service industry.

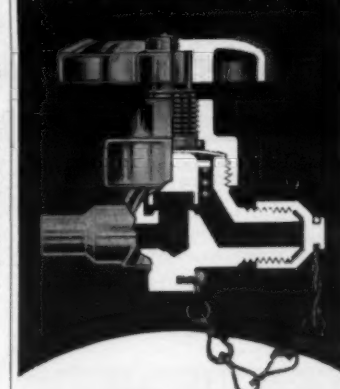
Holland indicated that its policy was to recommend replacement of deteriorated furnace parts with new rather than relying on makeshift repairs.

"The basic question in dispute between Holland and the FTC is the difference of opinion as to when and under what circumstances heating equipment and parts can be safely and practically repaired," a company statement declared.

It added that the FTC has "put its stamp of approval upon hazardous repair practices in the heating industry which could expose innumerable people in private homes, public schools, and other buildings to the gravest of risks."

Precision Designed for REFRIGERATION and AIR CONDITIONING SYSTEMS

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- 2 1/2" diameter handwheel, colored for easy identification

Designed for ease of operation, this new valve features compact packless diaphragms of beryllium copper and stainless steel, for maximum resistance to wear. Rugged forged brass body has integral mounting flange. Maximum operating pressure, 500 p.s.i. Maximum temperature, 200° F. Connection size inlet 3/8" solder connection—outlet 1/2" male flare. See your Kerotest wholesaler today.

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KEROTEST MANUFACTURING CO.
2502 Liberty Avenue
Pittsburgh 22, Pa.

Room Unit Excise Tax Proposal--

(Concluded from Page 1, Col. 5) appliances since the adoption of the Revised Internal Revenue Code of 1954.

In its communication to the associations, the IRS said that it proposed to modify the last paragraph of Revenue Ruling 54-462 to read (in part):

"It is held that a self-contained air conditioning unit subject to tax under section 4111 of the Code includes a compressor type or an absorption type unit, whether a factory-made encased assembly or one sold for assembly on installation, which is designed for the free delivery without ducts of conditioned air and for use as a portable or console in or in front of a window or other opening. . . ."

Further, "under the aforementioned rule motor horsepower or B.t.u. per hour cooling capacity will not be considered a factor in determining the taxability of self-contained air conditioning units."

Conceivably, there could be some apprehension that the IRS might attempt to interpret its proposed new ruling as applying to any self-contained air conditioner, regardless of size, which operated with a free delivery of air (that is, without ductwork), but this is generally considered to be improbable.

The tax on room air conditioners was originally imposed under section 3405 (c) of the Internal Revenue Code of 1939, now section 4111 of the 1954 code, under a heading "household equipment." In a clarification of the type of unit that would be subject to the tax, issued in 1954, the IRS exempted any unit that:

"Has a total motor horsepower of less than 1 hp. for motor-driven compressor types,

or, in the case of absorption types, a total cooling capacity of less than 10,000 B.t.u. per hour."

The IRS also says that its proposed revised definition makes provision for units which may include means for heating the air. Such units, it is stated, will probably consist of the following categories with the tax consequences indicated generally for each category:

(1) Units which provide heat through a mere reversal of the refrigerant fluid cycle. These would be taxable in their entirety.

(2) Units which furnish heat by means of electrical resistance heating elements. These are partially taxable as self-contained air conditioning units under section 4111 and partially as electric air heaters under section 4121.

(3) Units which include provisions for heating by means of steam or hot water piped into the unit from an outside source. These would be partially taxable as air conditioning units.

"The classification of combination cooling-heating units and basis for tax will be resolved in each case on its individual merits," stated the IRS.

Elimination of 5% Tax on Refrigerator Components Likely

WASHINGTON, D. C.—Elimination of the 5% excise tax on refrigerator components seemed almost certain last week as House and Senate conferees got together to compromise on an excise tax bill.

Removal of this tax was provided for in both House and Senate versions of the bill.

You Asked About It

From the many requests for information it receives, the News will select and publish some of general interest. In many instances, the answers will be supplied by authorities in the industry.

Q. In a recent column, mention was made of the dangers of high paint drying temperatures on cars containing air conditioning. Here's another problem.

Manufacturers recommend washing auto air conditioner condensers with soap and water; they warn against the use of steam. But soap and water too often don't do the job. What then?

C. B.—Windsor, Canada

A. As a general rule, of course, it is unwise to ignore manufacturers' recommendations concerning servicing of their products. In this specific case, however, there have been numerous complaints about the inability of soap and water to handle the job. At least one reader feels he has an answer to the problem.

George L. Johnson, Johnson

Refrigeration Service, Yuba City, Calif., has cleaned over 90 condensers by playing cold water on one half of the condenser while the other half is being steam cleaned. When the car radiator is being steam cleaned, cold water is spraying constantly on the air conditioner condenser.

According to Johnson, this procedure has worked without a single blown rubber hose or any difficulty at all.

Q. What in the devil is the fourth wire for on the 1957 General Electric compressors?

C.T.—Washington, D.C.

A. According to a G-E spokesman, the fourth wire is for an auxiliary overload protection against low voltage. This fourth wire goes through an external resistor and also may be identified by color code, he points out.

CLOSE-OUT! BRAND-NEW COMPRESSORS & FAN MOTORS

As a result of discontinuing production we have a quantity of brand-new compressors for refrigerators and air conditioners, also a quantity of air conditioner fan and blower motors to dispose of at a fraction of former prices. Send for list and prices.

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915 Liberty Ave., Pittsburgh 22, Pa.

Fined \$10 Plus Costs

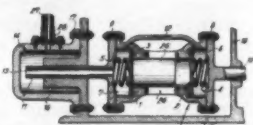
WILMINGTON, Del. — For keeping two refrigerators and an ice box in his yard without removing the latches, Duncan West of suburban Minquale was fined \$10 plus court costs, in Court of Common Pleas here.

Judge Robert H. Wahl warned West to remove the doors or face a \$100 fine.

PATENTS

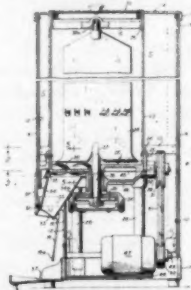
Week of June 17 (Concluded)

2,839,237. **ELECTRIC OSCILLATING COMPRESSOR, PARTICULARLY FOR SMALL REFRIGERATORS.** Heinrich Dolz, Berlin-Schöneberg, Germany, assignor to Sofix Aktiengesellschaft, Vaduz, Lichtenstein, a corporation of Lichtenstein.



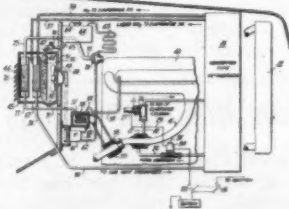
1. An electric oscillator driven compressor comprising, in combination, a compressor and an electric reciprocating motor having a driving armature reciprocated rectilinearly, said compressor comprising a cylinder connected to said armature of the electric reciprocating motor to be reciprocated thereby.

2,839,250. **ICE CHIPPER.** Emory W. Brockman, Bala-Cynwyd, Pa., and Seymour C. Kantor, Forest Hills, N. Y.

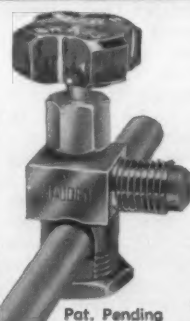


1. In a device of the character described, a framework; a motor mounted on said framework and having a shaft; a sub-frame carried by said framework; a first driven shaft mounted on said sub-frame; a vertical shaft mounted on said sub-frame; gearing between said driven and vertical shafts; a paddle fixedly mounted at its lower end on said vertical shaft to be rotated thereby.

2,839,274. **AIR CONDITIONING SYSTEM FOR AUTOMOBILES.** Paul William Polin, Chicago, Ill., assignor to Polin Enterprises, Inc., a corporation of Illinois.



PERFORMANCE PROVED! Madden HP-41 Hermetic Port Valve



1 VALVE
PIERCES
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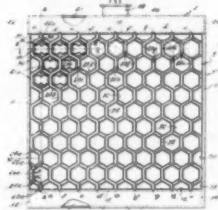
For 1/2 inch tube ask
for the Madden HP-68

Write for free catalog R-358 listing other Madden performance-proved products: valves, fittings, charging lines, etc.

MADDEEN BRASS PRODUCTS COMPANY
AURORA 6, ILLINOIS, U.S.A.
EXPORT: Ad. Aurora 83 Broad St., New York, N. Y.

4. For use in an automotive vehicle having a heat engine for driving the same and having a passenger compartment, the combination of a continuous absorption type refrigerating system having a cooling unit in the passenger compartment, means for operating said refrigerating system from the waste heat of said engine.

2,839,275. **HEAT EXCHANGER.** Robert H. Shaw, East Hartford, Conn., assignor to United Aircraft Corp., East Hartford, Conn.

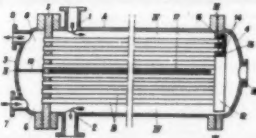


9. In a heat exchanger, a gas flow chamber having top and bottom walls provided with vertically aligned holes therein arranged in a plurality of lines extending lengthwise of said chamber, a first row of tubes extending between the first hole of each line of holes of said top and corresponding holes in said bottom.

Editor's Note: Patents described here have been selected from the "Official Gazette" of the United States Patent Office. They offer only a brief summary of each invention. In some instances only the first part of the digest is presented.

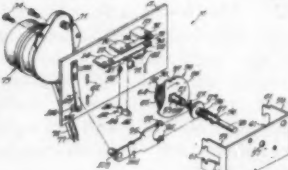
Printed copies of patents, reissued patents, and patent designs may be secured from the Patent Office; patents and reissues are 25¢ each, while designs are furnished at 10¢ each. Address orders to: Commissioner of Patents, Washington 25, D.C.

2,839,276. **HEAT EXCHANGER.** Giovanni Rossi, Milan, Italy.



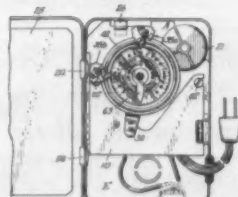
1. A heat exchange apparatus, comprising, in combination, an elongated fluid-tight housing having opposite end walls and defining a chamber; a plurality of first and second tubular members in said chamber and extending in the direction of its length.

2,839,283. **TIME SWITCH MECHANISM.** Anthony D. Stolle, Chicago, Ill., assignor to International Register Co., Chicago, Ill.



1. In time switch mechanism of the class described, the combination of a set of main contacts, a rotatable circular cam having a cam track adapted to control said main contacts, said cam track having a recess therein rotatable into a contact actuating position where it causes actuation of said main contacts.

2,839,284. **SHORT INTERVAL TIME SWITCH.** Anthony Dan Stolle, Chicago, Ill., assignor to International Register Co., Chicago, Ill.



1. In a time switch, the combination of switch contact means, spring biased switch actuating means normally holding said switch contact means in a first position, a continuously rotating time driven dial, and a switch actuating tripper carried by said dial and arranged to actuate said switch actuating means in opposition to its spring bias for moving said switch contact means to a second position.

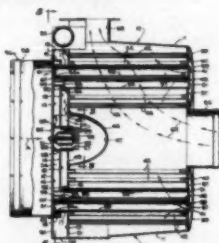
Week of June 24

2,839,753. **DOOR STRUCTURE.** Robert E. Fields, Evansville, Ind., assignor, by mesne assignments, to Whirlpool Corp.



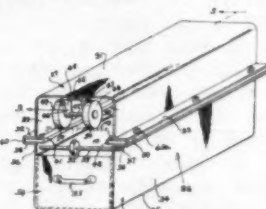
In a decorative panel construction for refrigerator doors having an outer shell provided with a side wall formed of a channelled frame member extending about the top, bottom, and sides of the door, with front and rear flanges of the channel turned inwardly, the improvement which comprises a front wall member having a central front wall portion provided with a peripheral rearwardly extending flange joined to the central portion by a curved portion forming a rearwardly extending shoulder extending completely about the front wall member.

2,839,898. **MULTIPLE VORTEX TUBE GENERATOR COOLING UNIT.** Frederick H. Green, Los Angeles, Calif., assignor to The Garrett Corp., Los Angeles, Calif.



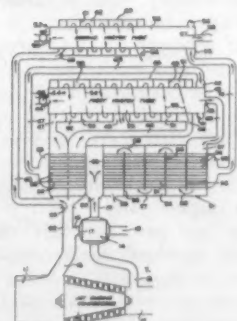
1. In an aircraft having a jet engine compressor and a ram air duct, a system for cooling and pressurizing an instrumentality: a delivery duct to take high pressure air from the outlet of said compressor; vortex tube means connected to said delivery duct; means arranged to conduct coolant air from said ram duct across outer surfaces of said vortex tube means.

2,839,899. **ICE CUBE EJECTOR MECHANISM.** Ernest A. Bailly and Adolph D. Corn, Evansville, Ind., assignors to Whirlpool Corp.



An ice cube ejecting assembly comprising, an ice tray of resilient material having a resilient bottom, side walls and end walls, forming a tray tapering downwardly toward the bottom on all sides, the said tray being provided with an integral, resilient grid having a central partition extending down the middle of the tray and a multiplicity of transverse partitions extending from the central partition to the side walls.

2,839,900. **REGENERATIVE VORTEX COOLING SYSTEMS.** Frederick H. Green, Palos Verdes Estates, Calif., assignor to The Garrett Corp., Los Angeles, Calif.



1. In a system for supplying cooled air in an aerial vehicle having a compressor, a ram air duct and heat exchange means employing ram air to cool compressed air from said compressor: first vortex tube means; second vortex tube means, said second vortex tube means having a cooled air outlet for delivery of the supply of cooled air.

(To Be Continued)

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DISTRIBUTORS WANTED for spun glass type filters. Complete line of standard and special sizes. D. F. BOWMAN CO., INC., P. O. Box 23, New Albany, Indiana.

TWO OR three zone managers are needed for a growing sales organization by a commercial refrigerator manufacturer. Men who are selling refrigerators to food chains, super markets, wholesale grocers or refrigeration dealers would have preference. They might presently be refrigeration distributors or associated with a refrigerator manufacturer—but desirous of improving their situation by locating elsewhere or simply anxious to cash in on experience and make more money. If you are one of these men, write John S. Twist, vice president of sales, SHERER-GILLET CO., Marshall, Michigan.

WANTED, SALES Engineer for Southwestern territory by national manufacturer of refrigeration, heating and air conditioning equipment. Applicant must now be living in Houston, Dallas or Fort Worth, Texas and must be well qualified to work with distributors, contractors, architects and consulting engineers. All replies held in confidence. Reply to BOX A6087, Air Conditioning & Refrigeration News.

REFRIGERATION ENGINEER—Manufacturer of vending machines and bottle coolers for nation's leading bottler of soft drinks desires recent graduate engineer with experience in testing and design of hermetic systems. Send resume and salary requirements to BOX A6088, Air Conditioning & Refrigeration News.

EXCEPTIONALLY ATTRACTIVE opportunity with leading manufacturer. We are seeking trained and experienced refrigeration engineers to serve as project engineers in air conditioning research and development. Write BOX A6089, Air Conditioning & Refrigeration News.

MANUFACTURERS' REPRESENTATIVE for commercial refrigerator manufacturer. Several desirable territories open. Activities to include contacting distributors, dealers, and food chains. Give details as to experience, territories in which you can give complete coverage, and industry references. Replies held in confidence until interview. BOX A6090, Air Conditioning & Refrigeration News.

SALES EXECUTIVE: Opportunity for a successful sales executive to establish himself with a commercial refrigerator manufacturer that has a challenging opening and future. Experience and following in commercial and super-market equipment absolutely necessary. All replies will be held confidential until after interview. Give full experience and statistics in first letter. BOX A6091, Air Conditioning & Refrigeration News.

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Sales potential and problems including how to sell packaged units, which units to install, illustrations, 20 check points in making the survey, rental plan, how to level your sales curve throughout the year. General applications include restaurants, banks, large building multiple installations—advantages for customers, employees, and management. Institutional applications, the packaged heat pump and industrial applications.

A complete, informative book pointing out the advantages resulting from the proper application of packaged units. Get on the road to more profits with "Commercial Packaged Air Conditioners at Work" at only \$1.00 each. Use coupon below.



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HER NAME IN LIGHTS on Broadway was a TV prize won by this pretty Charleston, S. C. mother of two. In letters 8 ft. high, the running message read: "Congratulations from Fedders to Mrs. Jacqueline Salmonsén, Charleston, S. C."

Cooling Off--

(Concluded from Page 1, Col. 3) ming pool water to cool the air conditioning condensers.

To most people, fishing is a chance to rough it and get away from everything except the mosquitoes. But not on Bob Johnson's fishing barge on Lake Texoma on the Oklahoma-Texas border.

On Johnson's barge, fishermen sit around a fishing hole in air conditioned comfort, keeping one eye on their lines and another on the television set. Hot food and coffee, and telephones are only a few steps away. Even the ladies don't mind fishing this way.

On Grapevine Lake in the Dallas area, there is another air conditioned fishing barge, cooled by 24 tons of air conditioning equipment. Termed the "world's largest," it measures 42 by 172 ft. and seats 100 around the air conditioned fishing hole. An additional 63 seats provide for fishermen who prefer the wide outside porch around the barge.

With 140 air conditioned buses now in service, the St. Louis Public Transit Service claims the largest fleet of air conditioned city buses in the nation.

"Our experiment with air conditioned express service last summer was very encouraging," Public Service President John C. Baine said.

"From an engineering standpoint, it is now quite clear that the air conditioning installations, which have been devised in our own shops, are completely practical for express buses."

It's happened here, too. The Canadian newspaper *Financial Post* reports that a recent survey of buildings in downtown Toronto showed that over 50% are air conditioned.

"It is getting more difficult to rent space where there's no air conditioning," the paper commented. "What was once considered a luxury has now become a necessity."

The less Herman Blewitt does for O. A. Sutton Corp., the better the air conditioning manufacturer likes it. Blewitt listens to the sound of newly manufactured air conditioners. If they are more than normally audible, he sends them back.

3 1/2-Day School for Refrigerated Motor Carriers Set for East Lansing

WASHINGTON, D. C.—A short course on the mechanical refrigeration cycle as it is applied in refrigerated motor carriers will be sponsored by the Air-Conditioning & Refrigeration Institute as a part of a technical school for supervisory and maintenance personnel of such carriers to be held at Michigan State University, East Lansing, Mich., Aug. 24-28, it is announced by Frederick J. Reed, ARI chief engineer.

The 3 1/2-day "Technical School for Refrigerated Motor Carriers" has been scheduled by the Common Carrier Conference-Irregular Route, an affiliated conference of the American Trucking Associations, Inc., with the object of promoting better per-

formance of refrigerated motor transportation.

The ARI-sponsored lectures on the refrigeration cycle will be presented by Prof. James L. Threlkeld of the Mechanical Engineering Dept. of the University of Minnesota, under arrangements made by the Mobile Air Conditioning & Refrigeration Section of ARI. Henry O. Kirkpatrick, general manager of American Mfg. Co., Montgomery, Ala., is chairman of the section.

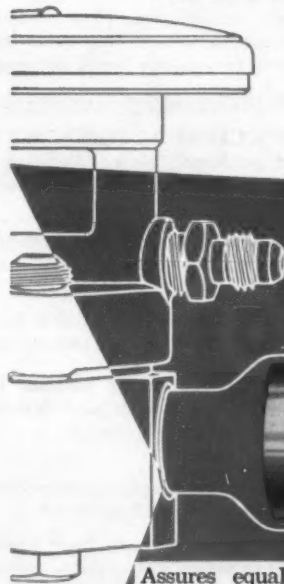
Attendance at the school is planned primarily for supervisory and maintenance personnel of refrigerated motor carriers, private fleet operators, and processors, and shippers of perishable commodities.



WILBUR S. HOKOM, retiring president and current treasurer, National Association of Plumbing Contractors, presented Peter T. Schoemann, general president, United Association of Plumbers and Pipefitters, with a plaque from the Employers' Council of Los Angeles at the National Plumbing-Heating-Cooling Exposition in Los Angeles. From the left are Dan MacDonald, U. A. apprentice coordinator; C. M. Gelski, U. A. supervisor, Local Union #250, Los Angeles; John McCartin, U. A. asst. general president; Beryl E. Notthoff, NAPC; Hokom; Schoemann; Archie Virtue, U. A. general organizer; John M. Rhoades, president, NAPC; Norman Piron, U. A. Training Department; and Irvin L. Rechkemmer, vice president, NAPC. Other NAPC officers elected at the convention are Carl N. Finley, 2nd vice president, and Frank H. Inscho, Jr., secretary.

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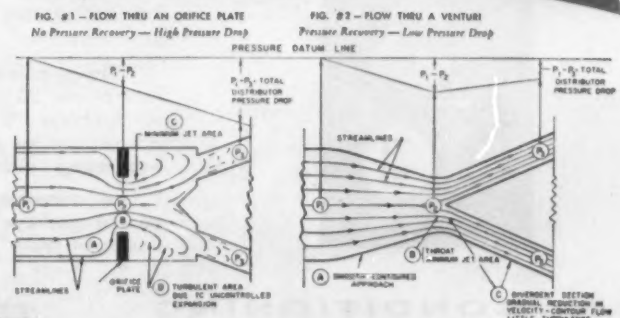
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